

不断逼近python版本，看库的版本高低

用pip install numpy=0 看可用库 可用的越多越好

Conda install 和 pip install

阿里和清华都试试

可以从官网下，cd到文件夹

有setup.py

pip install .

或者文件名

如图

找对应版本

cp是python版本

后面是系统

然后最前面是库的版本

在配环境中

这个错误是由于安装 torch 时，所用的 .whl 文件（Wheel 包）不完整或损坏

在跑代码中发现一个缩进问题

开源代码竟然有缩进错误

然后3个 路径字符问题

在 Windows 系统中，文件名中包含非法字符（如 \* 号）会导致错误。需要将非法字符替换为合法字符。

就是路径加了个 ‘ 可能是linux里面的

还有linux和win路径

用下面函数剔除特殊字符

def sanitize\_filename(filename): return re.sub(r'[<>:"/\\|?\*]', '\_', filename)

这段代码的意思是检查变量 attn\_savepath 是否有值。如果有值，就使用 pandas 的 to\_csv 方法将 temp\_pd DataFrame 保存为 CSV 文件。文件名由 attn\_savepath 变量和格式化字符串 '{}\_{}\_attention.csv'.format(hla, peptide) 生成，包含 hla 和 peptide 变量的值。

(sandianqi) C:\Users\czh>D:

(sandianqi) D:\>cd D:\TransPHLA-AOMP-master

(sandianqi) D:\TransPHLA-AOMP-master>pip install backcall==0.2.0 certifi==2020.12.5 chardet==3.0.4 cycler==0.10.0 decorator==4.4.2 dgl-cu110==0.5.3 et-xmlfile==1.0.1 graphviz==0.8.4 idna==2.10 ipykernel==5.3.4 ipython==7.19.0 ipython-genutils==0.2.0 iterative-stratification==0.1.6 jdcal==1.4.1 jedi==0.17.2 joblib jupyter-client==6.1.7 jupyter-core==4.7.0 kiwisolver==1.3.1 llvmlite==0.35.0 matplotlib==3.3.3 mkl-fft==1.2.0 mkl-random==1.2.0 mkl-service==2.3.0 networkx==2.5 numba==0.52.0 numpy==1.20.0rc1 olefile openpyxl==3.0.6 pandas==1.2.0 parso==0.7.1 pexpect==4.8.0 pickleshare==0.7.5 Pillow prompt-toolkit==3.0.8 ptyprocess==0.6.0 Pygments==2.7.3 pyparsing==2.4.7 python-dateutil==2.8.1 pytorchtools==0.0.2 pytz==2020.5 pyzmq==20.0.0 requests==2.25.0 scikit-learn scipy==1.5.4 seaborn==0.11.1 six threadpoolctl torch==1.7.0 torchaudio==0.7.0 torchsummary==1.5.1 torchvision==0.8.1 tornado==6.1 tqdm==4.54.1 traitlets==5.0.5 typing-extensions urllib3==1.26.2 wcwidth==0.2.5 xlrd==1.2.0

Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

Collecting backcall==0.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/4c/1c/ff6546b6c12603d8dd1070aa3c3d273ad4c07f5771689a7b69a550e8c951/backcall-0.2.0-py2.py3-none-any.whl (11 kB)

Collecting certifi==2020.12.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/5e/a0/5f06e1e1d463903cf0c0eebeb751791119ed7a4b3737fdc9a77f1cdfb51f/certifi-2020.12.5-py2.py3-none-any.whl (147 kB)

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Collecting chardet==3.0.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/bc/a9/01ffebfb562e4274b6487b4bb1ddec7ca55ec7510b22e4c51f14098443b8/chardet-3.0.4-py2.py3-none-any.whl (133 kB)

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Collecting cycler==0.10.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f7/d2/e07d3ebb2bd7af696440ce7e754c59dd546ffe1bbe732c8ab68b9c834e61/cycler-0.10.0-py2.py3-none-any.whl (6.5 kB)

Collecting decorator==4.4.2

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/ed/1b/72a1821152d07cf1d8b6fce298aeb06a7eb90f4d6d41acec9861e7cc6df0/decorator-4.4.2-py2.py3-none-any.whl (9.2 kB)

Collecting dgl-cu110==0.5.3

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/74/0c/2c1186c1050b6512cc101427fd8e7c1232435ac45bed1fcd8091c0872ce2/dgl\_cu110-0.5.3-cp37-cp37m-win\_amd64.whl (25.6 MB)

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Collecting et-xmlfile==1.0.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/22/28/a99c42aea746e18382ad9fb36f64c1c1f04216f41797f2f0fa567da11388/et\_xmlfile-1.0.1.tar.gz (8.4 kB)

Preparing metadata (setup.py) ... done

Collecting graphviz==0.8.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/53/39/4ab213673844e0c004bed8a0781a0721a3f6bb23eb8854ee75c236428892/graphviz-0.8.4-py2.py3-none-any.whl (16 kB)

Collecting idna==2.10

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/a2/38/928ddce2273eaa564f6f50de919327bf3a00f091b5baba8dfa9460f3a8a8/idna-2.10-py2.py3-none-any.whl (58 kB)

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Collecting ipykernel==5.3.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/52/19/c2812690d8b340987eecd2cbc18549b1d130b94c5d97fcbe49f5f8710edf/ipykernel-5.3.4-py3-none-any.whl (120 kB)

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Collecting ipython==7.19.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/e0/c7/1c91a71b413c82cd4c49fb8b6676f6135650cd2cca2745a96bd84a56166c/ipython-7.19.0-py3-none-any.whl (784 kB)

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Collecting ipython-genutils==0.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/fa/bc/9bd3b5c2b4774d5f33b2d544f1460be9df7df2fe42f352135381c347c69a/ipython\_genutils-0.2.0-py2.py3-none-any.whl (26 kB)

Collecting iterative-stratification==0.1.6

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9d/79/9ba64c8c07b07b8b45d80725b2ebd7b7884701c1da34f70d4749f7b45f9a/iterative\_stratification-0.1.6-py3-none-any.whl (8.7 kB)

Collecting jdcal==1.4.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f0/da/572cbc0bc582390480bbd7c4e93d14dc46079778ed915b505dc494b37c57/jdcal-1.4.1-py2.py3-none-any.whl (9.5 kB)

Collecting jedi==0.17.2

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/c3/d4/36136b18daae06ad798966735f6c3fb96869c1be9f8245d2a8f556e40c36/jedi-0.17.2-py2.py3-none-any.whl (1.4 MB)

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Collecting joblib

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/10/40/d551139c85db202f1f384ba8bcf96aca2f329440a844f924c8a0040b6d02/joblib-1.3.2-py3-none-any.whl (302 kB)

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Collecting jupyter-client==6.1.7

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/dc/41/9fa443d5ae8907dd8f7d12146cb0092dc053afd67b5b57e7e8786a328547/jupyter\_client-6.1.7-py3-none-any.whl (108 kB)

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Collecting jupyter-core==4.7.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f4/34/ba811d7e4b5374e70fc3801d932966979e252e5c1a99eddb32ce63ec54e6/jupyter\_core-4.7.0-py3-none-any.whl (82 kB)

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Collecting kiwisolver==1.3.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/b2/55/6681ac2cc8de9bb612b1a777606e5beef240bf63aaa6cb03f44af5f42a77/kiwisolver-1.3.1-cp37-cp37m-win\_amd64.whl (51 kB)

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Collecting llvmlite==0.35.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/54/46/1abf8a9cefed0647283d4e9500976512fa925b5302d397c1f018528e6f1b/llvmlite-0.35.0-cp37-cp37m-win\_amd64.whl (16.0 MB)

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Collecting matplotlib==3.3.3

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/24/02/202982cbc4ab7a5a87c7f8d16e51d464016af742d5fb2d2b6b23116caec5/matplotlib-3.3.3-cp37-cp37m-win\_amd64.whl (8.5 MB)

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Collecting mkl-fft==1.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d2/80/8f6aeafe4b1d97ecf824f5b5b6986b401242444f5be4a490918ca2ebc162/mkl\_fft-1.2.0-10-cp37-cp37m-win\_amd64.whl (224 kB)

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Collecting mkl-random==1.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/0f/f0/67d8e81c6f8fcd5ecc029262e48d3a6e32e537447110930ac93b7ef21c96/mkl\_random-1.2.0-10-cp37-cp37m-win\_amd64.whl (361 kB)

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Collecting mkl-service==2.3.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/27/6b/7b1329f7fcb8ee661560c1da1c42fdb64136f23de9b8d29d7703e05445b3/mkl\_service-2.3.0-10-cp37-cp37m-win\_amd64.whl (42 kB)

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Collecting networkx==2.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9b/cd/dc52755d30ba41c60243235460961fc28022e5b6731f16c268667625baea/networkx-2.5-py3-none-any.whl (1.6 MB)

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Collecting numba==0.52.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/e8/f8/87b899da6ff667de4e41a3b614edd8a0d20e179bf2c562dba6ff399483ad/numba-0.52.0-cp37-cp37m-win\_amd64.whl (2.3 MB)

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ERROR: Ignored the following versions that require a different python version: 0.12.0 Requires-Python >=3.8; 0.12.0rc1 Requires-Python >=3.8; 0.12.1 Requires-Python >=3.8; 0.20.2 Requires-Python >=3.8; 0.20.3 Requires-Python >=3.8; 0.40.0 Requires-Python >=3.8; 0.40.0rc1 Requires-Python >=3.8; 0.40.1 Requires-Python >=3.8; 0.40.1rc1 Requires-Python >=3.8; 0.41.0 Requires-Python >=3.8; 0.41.0rc1 Requires-Python >=3.8; 0.41.1 Requires-Python >=3.8; 0.42.0 Requires-Python >=3.9; 0.42.0rc1 Requires-Python >=3.9; 0.43.0 Requires-Python >=3.9; 0.43.0rc1 Requires-Python >=3.9; 0.57.0 Requires-Python >=3.8; 0.57.0rc1 Requires-Python >=3.8; 0.57.1 Requires-Python >=3.8; 0.57.1rc1 Requires-Python >=3.8; 0.58.0 Requires-Python >=3.8; 0.58.0rc1 Requires-Python >=3.8; 0.58.0rc2 Requires-Python >=3.8; 0.58.1 Requires-Python >=3.8; 0.59.0 Requires-Python >=3.9; 0.59.0rc1 Requires-Python >=3.9; 0.59.1 Requires-Python >=3.9; 0.60.0 Requires-Python >=3.9; 0.60.0rc1 Requires-Python >=3.9; 1.22.0 Requires-Python >=3.8; 1.22.1 Requires-Python >=3.8; 1.22.2 Requires-Python >=3.8; 1.22.3 Requires-Python >=3.8; 1.22.4 Requires-Python >=3.8; 1.23.0 Requires-Python >=3.8; 1.23.0rc1 Requires-Python >=3.8; 1.23.0rc2 Requires-Python >=3.8; 1.23.0rc3 Requires-Python >=3.8; 1.23.1 Requires-Python >=3.8; 1.23.2 Requires-Python >=3.8; 1.23.3 Requires-Python >=3.8; 1.23.4 Requires-Python >=3.8; 1.23.5 Requires-Python >=3.8; 1.24.0 Requires-Python >=3.8; 1.24.0rc1 Requires-Python >=3.8; 1.24.0rc2 Requires-Python >=3.8; 1.24.1 Requires-Python >=3.8; 1.24.2 Requires-Python >=3.8; 1.24.3 Requires-Python >=3.8; 1.24.4 Requires-Python >=3.8; 1.25.0 Requires-Python >=3.9; 1.25.0rc1 Requires-Python >=3.9; 1.25.1 Requires-Python >=3.9; 1.25.2 Requires-Python >=3.9; 1.26.0 Requires-Python <3.13,>=3.9; 1.26.0b1 Requires-Python <3.13,>=3.9; 1.26.0rc1 Requires-Python <3.13,>=3.9; 1.26.1 Requires-Python <3.13,>=3.9; 1.26.2 Requires-Python >=3.9; 1.26.3 Requires-Python >=3.9; 1.26.4 Requires-Python >=3.9; 1.4.0 Requires-Python >=3.8; 1.4.2 Requires-Python >=3.8; 2.0.0 Requires-Python >=3.9; 2.0.0b1 Requires-Python >=3.9; 2.0.0rc1 Requires-Python >=3.9; 2.0.0rc2 Requires-Python >=3.9; 2.7 Requires-Python >=3.8; 2.7.1 Requires-Python >=3.8; 2.7rc1 Requires-Python >=3.8; 2.8 Requires-Python >=3.8; 2.8.1 Requires-Python >=3.8; 2.8.1rc1 Requires-Python >=3.8; 2.8.2 Requires-Python >=3.8; 2.8.3 Requires-Python >=3.8; 2.8.4 Requires-Python >=3.8; 2.8.5 Requires-Python >=3.8; 2.8.6 Requires-Python >=3.8; 2.8.7 Requires-Python >=3.8; 2.8.8 Requires-Python >=3.8; 2.8rc1 Requires-Python >=3.8; 3.0 Requires-Python >=3.8; 3.0b1 Requires-Python >=3.8; 3.0rc1 Requires-Python >=3.8; 3.1 Requires-Python >=3.8; 3.1rc0 Requires-Python >=3.8; 3.2 Requires-Python >=3.9; 3.2.1 Requires-Python >=3.9; 3.2rc0 Requires-Python >=3.9; 3.3 Requires-Python >=3.10; 3.3rc0 Requires-Python >=3.10; 3.6.0 Requires-Python >=3.8; 3.6.0rc1 Requires-Python >=3.8; 3.6.0rc2 Requires-Python >=3.8; 3.6.1 Requires-Python >=3.8; 3.6.2 Requires-Python >=3.8; 3.6.3 Requires-Python >=3.8; 3.7.0 Requires-Python >=3.8; 3.7.0rc1 Requires-Python >=3.8; 3.7.1 Requires-Python >=3.8; 3.7.2 Requires-Python >=3.8; 3.7.3 Requires-Python >=3.8; 3.7.4 Requires-Python >=3.8; 3.7.5 Requires-Python >=3.8; 3.8.0 Requires-Python >=3.9; 3.8.0rc1 Requires-Python >=3.9; 3.8.1 Requires-Python >=3.9; 3.8.2 Requires-Python >=3.9; 3.8.3 Requires-Python >=3.9; 3.8.4 Requires-Python >=3.9; 3.9.0 Requires-Python >=3.9; 3.9.0rc2 Requires-Python >=3.9; 5.0.0 Requires-Python >=3.8; 5.1.0 Requires-Python >=3.8; 5.1.1 Requires-Python >=3.8; 5.1.2 Requires-Python >=3.8; 5.1.3 Requires-Python >=3.8; 5.1.4 Requires-Python >=3.8; 5.1.5 Requires-Python >=3.8; 5.2.0 Requires-Python >=3.8; 5.3.0 Requires-Python >=3.8; 5.3.1 Requires-Python >=3.8; 5.3.2 Requires-Python >=3.8; 5.4.0 Requires-Python >=3.8; 5.5.0 Requires-Python >=3.8; 5.5.1 Requires-Python >=3.8; 5.6.0 Requires-Python >=3.8; 5.6.1 Requires-Python >=3.8; 5.7.0 Requires-Python >=3.8; 5.7.1 Requires-Python >=3.8; 5.7.2 Requires-Python >=3.8; 6.17.0 Requires-Python >=3.8; 6.17.1 Requires-Python >=3.8; 6.18.0 Requires-Python >=3.8; 6.18.1 Requires-Python >=3.8; 6.18.2 Requires-Python >=3.8; 6.18.3 Requires-Python >=3.8; 6.19.0 Requires-Python >=3.8; 6.19.1 Requires-Python >=3.8; 6.19.2 Requires-Python >=3.8; 6.19.3 Requires-Python >=3.8; 6.19.4 Requires-Python >=3.8; 6.20.0 Requires-Python >=3.8; 6.20.1 Requires-Python >=3.8; 6.20.2 Requires-Python >=3.8; 6.21.0 Requires-Python >=3.8; 6.21.1 Requires-Python >=3.8; 6.21.2 Requires-Python >=3.8; 6.21.3 Requires-Python >=3.8; 6.22.0 Requires-Python >=3.8; 6.23.0 Requires-Python >=3.8; 6.23.1 Requires-Python >=3.8; 6.23.2 Requires-Python >=3.8; 6.23.3 Requires-Python >=3.8; 6.24.0 Requires-Python >=3.8; 6.25.0 Requires-Python >=3.8; 6.25.1 Requires-Python >=3.8; 6.25.2 Requires-Python >=3.8; 6.26.0 Requires-Python >=3.8; 6.27.0 Requires-Python >=3.8; 6.27.1 Requires-Python >=3.8; 6.28.0 Requires-Python >=3.8; 6.29.0 Requires-Python >=3.8; 6.29.1 Requires-Python >=3.8; 6.29.2 Requires-Python >=3.8; 6.29.3 Requires-Python >=3.8; 6.29.4 Requires-Python >=3.8; 8.0.0 Requires-Python >=3.8; 8.0.0a1 Requires-Python >=3.8; 8.0.0a2 Requires-Python >=3.8; 8.0.0a3 Requires-Python >=3.8; 8.0.0a4 Requires-Python >=3.8; 8.0.0b0 Requires-Python >=3.8; 8.0.0b1 Requires-Python >=3.8; 8.0.0b2 Requires-Python >=3.8; 8.0.0b3 Requires-Python >=3.8; 8.0.0rc0 Requires-Python >=3.8; 8.0.0rc1 Requires-Python >=3.8; 8.0.1 Requires-Python >=3.8; 8.0.2 Requires-Python >=3.8; 8.0.3 Requires-Python >=3.8; 8.1.0 Requires-Python >=3.8; 8.1.1 Requires-Python >=3.8; 8.10.0 Requires-Python >=3.8; 8.11.0 Requires-Python >=3.8; 8.12.0 Requires-Python >=3.8; 8.12.1 Requires-Python >=3.8; 8.12.2 Requires-Python >=3.8; 8.12.3 Requires-Python >=3.8; 8.13.0 Requires-Python >=3.8; 8.13.1 Requires-Python >=3.9; 8.13.2 Requires-Python >=3.9; 8.14.0 Requires-Python >=3.9; 8.15.0 Requires-Python >=3.9; 8.16.0 Requires-Python >=3.9; 8.16.1 Requires-Python >=3.9; 8.17.0 Requires-Python >=3.9; 8.17.1 Requires-Python >=3.9; 8.17.2 Requires-Python >=3.9; 8.18.0 Requires-Python >=3.9; 8.18.1 Requires-Python >=3.9; 8.19.0 Requires-Python >=3.10; 8.2.0 Requires-Python >=3.8; 8.20.0 Requires-Python >=3.10; 8.21.0 Requires-Python >=3.10; 8.22.0 Requires-Python >=3.10; 8.22.1 Requires-Python >=3.10; 8.22.2 Requires-Python >=3.10; 8.23.0 Requires-Python >=3.10; 8.24.0 Requires-Python >=3.10; 8.25.0 Requires-Python >=3.10; 8.3.0 Requires-Python >=3.8; 8.3.1 Requires-Python >=3.8; 8.4.0 Requires-Python >=3.8; 8.5.0 Requires-Python >=3.8; 8.6.0 Requires-Python >=3.8; 8.6.1 Requires-Python >=3.8; 8.6.2 Requires-Python >=3.8; 8.7.0 Requires-Python >=3.8; 8.8.0 Requires-Python >=3.8; 8.9.0 Requires-Python >=3.8

ERROR: Could not find a version that satisfies the requirement numpy==1.20.0rc1 (from versions: 1.3.0, 1.4.1, 1.5.0, 1.5.1, 1.6.0, 1.6.1, 1.6.2, 1.7.0, 1.7.1, 1.7.2, 1.8.0, 1.8.1, 1.8.2, 1.9.0, 1.9.1, 1.9.2, 1.9.3, 1.10.0.post2, 1.10.1, 1.10.2, 1.10.4, 1.11.0, 1.11.1, 1.11.2, 1.11.3, 1.12.0, 1.12.1, 1.13.0, 1.13.1, 1.13.3, 1.14.0, 1.14.1, 1.14.2, 1.14.3, 1.14.4, 1.14.5, 1.14.6, 1.15.0, 1.15.1, 1.15.2, 1.15.3, 1.15.4, 1.16.0, 1.16.1, 1.16.2, 1.16.3, 1.16.4, 1.16.5, 1.16.6, 1.17.0, 1.17.1, 1.17.2, 1.17.3, 1.17.4, 1.17.5, 1.18.0, 1.18.1, 1.18.2, 1.18.3, 1.18.4, 1.18.5, 1.19.0, 1.19.1, 1.19.2, 1.19.3, 1.19.4, 1.19.5, 1.20.0, 1.20.1, 1.20.2, 1.20.3, 1.21.0, 1.21.1, 1.21.2, 1.21.3, 1.21.4, 1.21.5, 1.21.6)

ERROR: No matching distribution found for numpy==1.20.0rc1

(sandianqi) D:\TransPHLA-AOMP-master>pip install numpy==0

Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

ERROR: Ignored the following versions that require a different python version: 1.22.0 Requires-Python >=3.8; 1.22.1 Requires-Python >=3.8; 1.22.2 Requires-Python >=3.8; 1.22.3 Requires-Python >=3.8; 1.22.4 Requires-Python >=3.8; 1.23.0 Requires-Python >=3.8; 1.23.0rc1 Requires-Python >=3.8; 1.23.0rc2 Requires-Python >=3.8; 1.23.0rc3 Requires-Python >=3.8; 1.23.1 Requires-Python >=3.8; 1.23.2 Requires-Python >=3.8; 1.23.3 Requires-Python >=3.8; 1.23.4 Requires-Python >=3.8; 1.23.5 Requires-Python >=3.8; 1.24.0 Requires-Python >=3.8; 1.24.0rc1 Requires-Python >=3.8; 1.24.0rc2 Requires-Python >=3.8; 1.24.1 Requires-Python >=3.8; 1.24.2 Requires-Python >=3.8; 1.24.3 Requires-Python >=3.8; 1.24.4 Requires-Python >=3.8; 1.25.0 Requires-Python >=3.9; 1.25.0rc1 Requires-Python >=3.9; 1.25.1 Requires-Python >=3.9; 1.25.2 Requires-Python >=3.9; 1.26.0 Requires-Python <3.13,>=3.9; 1.26.0b1 Requires-Python <3.13,>=3.9; 1.26.0rc1 Requires-Python <3.13,>=3.9; 1.26.1 Requires-Python <3.13,>=3.9; 1.26.2 Requires-Python >=3.9; 1.26.3 Requires-Python >=3.9; 1.26.4 Requires-Python >=3.9; 2.0.0 Requires-Python >=3.9; 2.0.0b1 Requires-Python >=3.9; 2.0.0rc1 Requires-Python >=3.9; 2.0.0rc2 Requires-Python >=3.9

ERROR: Could not find a version that satisfies the requirement numpy==0 (from versions: 1.3.0, 1.4.1, 1.5.0, 1.5.1, 1.6.0, 1.6.1, 1.6.2, 1.7.0, 1.7.1, 1.7.2, 1.8.0, 1.8.1, 1.8.2, 1.9.0, 1.9.1, 1.9.2, 1.9.3, 1.10.0.post2, 1.10.1, 1.10.2, 1.10.4, 1.11.0, 1.11.1, 1.11.2, 1.11.3, 1.12.0, 1.12.1, 1.13.0, 1.13.1, 1.13.3, 1.14.0, 1.14.1, 1.14.2, 1.14.3, 1.14.4, 1.14.5, 1.14.6, 1.15.0, 1.15.1, 1.15.2, 1.15.3, 1.15.4, 1.16.0, 1.16.1, 1.16.2, 1.16.3, 1.16.4, 1.16.5, 1.16.6, 1.17.0, 1.17.1, 1.17.2, 1.17.3, 1.17.4, 1.17.5, 1.18.0, 1.18.1, 1.18.2, 1.18.3, 1.18.4, 1.18.5, 1.19.0, 1.19.1, 1.19.2, 1.19.3, 1.19.4, 1.19.5, 1.20.0, 1.20.1, 1.20.2, 1.20.3, 1.21.0, 1.21.1, 1.21.2, 1.21.3, 1.21.4, 1.21.5, 1.21.6)

ERROR: No matching distribution found for numpy==0

(sandianqi) D:\TransPHLA-AOMP-master>pip install numpy==1.20.0

Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

Collecting numpy==1.20.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/4c/0e/7220e8ed03c55a1c1c2d68bd45fa28c04787477740ad64a918d25f6d0eb9/numpy-1.20.0-cp37-cp37m-win\_amd64.whl (13.6 MB)

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Installing collected packages: numpy

Successfully installed numpy-1.20.0

(sandianqi) D:\TransPHLA-AOMP-master>pip install backcall==0.2.0 certifi==2020.12.5 chardet==3.0.4 cycler==0.10.0 decorator==4.4.2 dgl-cu110==0.5.3 et-xmlfile==1.0.1 graphviz==0.8.4 idna==2.10 ipykernel==5.3.4 ipython==7.19.0 ipython-genutils==0.2.0 iterative-stratification==0.1.6 jdcal==1.4.1 jedi==0.17.2 joblib jupyter-client==6.1.7 jupyter-core==4.7.0 kiwisolver==1.3.1 llvmlite==0.35.0 matplotlib==3.3.3 mkl-fft==1.2.0 mkl-random==1.2.0 mkl-service==2.3.0 networkx==2.5 numba==0.52.0 olefile openpyxl==3.0.6 pandas==1.2.0 parso==0.7.1 pexpect==4.8.0 pickleshare==0.7.5 Pillow prompt-toolkit==3.0.8 ptyprocess==0.6.0 Pygments==2.7.3 pyparsing==2.4.7 python-dateutil==2.8.1 pytorchtools==0.0.2 pytz==2020.5 pyzmq==20.0.0 requests==2.25.0 scikit-learn scipy==1.5.4 seaborn==0.11.1 six threadpoolctl torch==1.7.0 torchaudio==0.7.0 torchsummary==1.5.1 torchvision==0.8.1 tornado==6.1 tqdm==4.54.1 traitlets==5.0.5 typing-extensions urllib3==1.26.2 wcwidth==0.2.5 xlrd==1.2.0

Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

Collecting backcall==0.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/4c/1c/ff6546b6c12603d8dd1070aa3c3d273ad4c07f5771689a7b69a550e8c951/backcall-0.2.0-py2.py3-none-any.whl (11 kB)

Collecting certifi==2020.12.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/5e/a0/5f06e1e1d463903cf0c0eebeb751791119ed7a4b3737fdc9a77f1cdfb51f/certifi-2020.12.5-py2.py3-none-any.whl (147 kB)

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Collecting chardet==3.0.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/bc/a9/01ffebfb562e4274b6487b4bb1ddec7ca55ec7510b22e4c51f14098443b8/chardet-3.0.4-py2.py3-none-any.whl (133 kB)

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Collecting cycler==0.10.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f7/d2/e07d3ebb2bd7af696440ce7e754c59dd546ffe1bbe732c8ab68b9c834e61/cycler-0.10.0-py2.py3-none-any.whl (6.5 kB)

Collecting decorator==4.4.2

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/ed/1b/72a1821152d07cf1d8b6fce298aeb06a7eb90f4d6d41acec9861e7cc6df0/decorator-4.4.2-py2.py3-none-any.whl (9.2 kB)

Collecting dgl-cu110==0.5.3

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/74/0c/2c1186c1050b6512cc101427fd8e7c1232435ac45bed1fcd8091c0872ce2/dgl\_cu110-0.5.3-cp37-cp37m-win\_amd64.whl (25.6 MB)

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Collecting et-xmlfile==1.0.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/22/28/a99c42aea746e18382ad9fb36f64c1c1f04216f41797f2f0fa567da11388/et\_xmlfile-1.0.1.tar.gz (8.4 kB)

Preparing metadata (setup.py) ... done

Collecting graphviz==0.8.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/53/39/4ab213673844e0c004bed8a0781a0721a3f6bb23eb8854ee75c236428892/graphviz-0.8.4-py2.py3-none-any.whl (16 kB)

Collecting idna==2.10

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/a2/38/928ddce2273eaa564f6f50de919327bf3a00f091b5baba8dfa9460f3a8a8/idna-2.10-py2.py3-none-any.whl (58 kB)

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Collecting ipykernel==5.3.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/52/19/c2812690d8b340987eecd2cbc18549b1d130b94c5d97fcbe49f5f8710edf/ipykernel-5.3.4-py3-none-any.whl (120 kB)

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Collecting ipython==7.19.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/e0/c7/1c91a71b413c82cd4c49fb8b6676f6135650cd2cca2745a96bd84a56166c/ipython-7.19.0-py3-none-any.whl (784 kB)

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Collecting ipython-genutils==0.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/fa/bc/9bd3b5c2b4774d5f33b2d544f1460be9df7df2fe42f352135381c347c69a/ipython\_genutils-0.2.0-py2.py3-none-any.whl (26 kB)

Collecting iterative-stratification==0.1.6

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9d/79/9ba64c8c07b07b8b45d80725b2ebd7b7884701c1da34f70d4749f7b45f9a/iterative\_stratification-0.1.6-py3-none-any.whl (8.7 kB)

Collecting jdcal==1.4.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f0/da/572cbc0bc582390480bbd7c4e93d14dc46079778ed915b505dc494b37c57/jdcal-1.4.1-py2.py3-none-any.whl (9.5 kB)

Collecting jedi==0.17.2

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/c3/d4/36136b18daae06ad798966735f6c3fb96869c1be9f8245d2a8f556e40c36/jedi-0.17.2-py2.py3-none-any.whl (1.4 MB)

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Collecting joblib

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/10/40/d551139c85db202f1f384ba8bcf96aca2f329440a844f924c8a0040b6d02/joblib-1.3.2-py3-none-any.whl (302 kB)

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Collecting jupyter-client==6.1.7

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/dc/41/9fa443d5ae8907dd8f7d12146cb0092dc053afd67b5b57e7e8786a328547/jupyter\_client-6.1.7-py3-none-any.whl (108 kB)

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Collecting jupyter-core==4.7.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f4/34/ba811d7e4b5374e70fc3801d932966979e252e5c1a99eddb32ce63ec54e6/jupyter\_core-4.7.0-py3-none-any.whl (82 kB)

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Collecting kiwisolver==1.3.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/b2/55/6681ac2cc8de9bb612b1a777606e5beef240bf63aaa6cb03f44af5f42a77/kiwisolver-1.3.1-cp37-cp37m-win\_amd64.whl (51 kB)

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Collecting llvmlite==0.35.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/54/46/1abf8a9cefed0647283d4e9500976512fa925b5302d397c1f018528e6f1b/llvmlite-0.35.0-cp37-cp37m-win\_amd64.whl (16.0 MB)

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Collecting matplotlib==3.3.3

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/24/02/202982cbc4ab7a5a87c7f8d16e51d464016af742d5fb2d2b6b23116caec5/matplotlib-3.3.3-cp37-cp37m-win\_amd64.whl (8.5 MB)

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Collecting mkl-fft==1.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d2/80/8f6aeafe4b1d97ecf824f5b5b6986b401242444f5be4a490918ca2ebc162/mkl\_fft-1.2.0-10-cp37-cp37m-win\_amd64.whl (224 kB)

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Collecting mkl-random==1.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/0f/f0/67d8e81c6f8fcd5ecc029262e48d3a6e32e537447110930ac93b7ef21c96/mkl\_random-1.2.0-10-cp37-cp37m-win\_amd64.whl (361 kB)

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Collecting mkl-service==2.3.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/27/6b/7b1329f7fcb8ee661560c1da1c42fdb64136f23de9b8d29d7703e05445b3/mkl\_service-2.3.0-10-cp37-cp37m-win\_amd64.whl (42 kB)

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Collecting networkx==2.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9b/cd/dc52755d30ba41c60243235460961fc28022e5b6731f16c268667625baea/networkx-2.5-py3-none-any.whl (1.6 MB)

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Collecting numba==0.52.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/e8/f8/87b899da6ff667de4e41a3b614edd8a0d20e179bf2c562dba6ff399483ad/numba-0.52.0-cp37-cp37m-win\_amd64.whl (2.3 MB)

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Collecting olefile

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/17/d3/b64c356a907242d719fc668b71befd73324e47ab46c8ebbbede252c154b2/olefile-0.47-py2.py3-none-any.whl (114 kB)

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Collecting openpyxl==3.0.6

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d4/c5/1a5f82b3020bfb27f21b302f96c8ae6a34475070015d1b1e0b197a97e2af/openpyxl-3.0.6-py2.py3-none-any.whl (242 kB)

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Collecting pandas==1.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/11/57/ae7d1ce265e057b2b44e25f9dec0b1d38e7a0e5458fc8d502ab9abf50e75/pandas-1.2.0-cp37-cp37m-win\_amd64.whl (9.1 MB)

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Collecting parso==0.7.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/93/d1/e635bdde32890db5aeb2ffbde17e74f68986305a4466b0aa373b861e3f00/parso-0.7.1-py2.py3-none-any.whl (109 kB)

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Collecting pexpect==4.8.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/39/7b/88dbb785881c28a102619d46423cb853b46dbccc70d3ac362d99773a78ce/pexpect-4.8.0-py2.py3-none-any.whl (59 kB)

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Collecting pickleshare==0.7.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9a/41/220f49aaea88bc6fa6cba8d05ecf24676326156c23b991e80b3f2fc24c77/pickleshare-0.7.5-py2.py3-none-any.whl (6.9 kB)

Collecting Pillow

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/cb/3c/4f3ef1a14e903d7b2bc43672c20f732b874e1e50a9a58ac9a1726ef3773d/Pillow-9.5.0-cp37-cp37m-win\_amd64.whl (2.5 MB)

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Collecting prompt-toolkit==3.0.8

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/8a/aa/198e6a857e83ea8b711a6ae0c37717c0eb1b23ff52e3732a644fcd389cb3/prompt\_toolkit-3.0.8-py3-none-any.whl (355 kB)

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Collecting ptyprocess==0.6.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d1/29/605c2cc68a9992d18dada28206eeada56ea4bd07a239669da41674648b6f/ptyprocess-0.6.0-py2.py3-none-any.whl (39 kB)

Collecting Pygments==2.7.3

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/85/c5/c437c383d5917fae9782eb6588bec8aff931afe13c76b9e8c03dacee9beb/Pygments-2.7.3-py3-none-any.whl (950 kB)

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Collecting pyparsing==2.4.7

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/8a/bb/488841f56197b13700afd5658fc279a2025a39e22449b7cf29864669b15d/pyparsing-2.4.7-py2.py3-none-any.whl (67 kB)

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Collecting python-dateutil==2.8.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d4/70/d60450c3dd48ef87586924207ae8907090de0b306af2bce5d134d78615cb/python\_dateutil-2.8.1-py2.py3-none-any.whl (227 kB)

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Collecting pytorchtools==0.0.2

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/07/7d/91fc993eed451ff2aff02e09a8e0246125b72cbc7068cb94242ca2c0e72f/pytorchtools-0.0.2-py2.py3-none-any.whl (3.1 kB)

Collecting pytz==2020.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/89/06/2c2d3034b4d6bf22f2a4ae546d16925898658a33b4400cfb7e2c1e2871a3/pytz-2020.5-py2.py3-none-any.whl (510 kB)

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Collecting pyzmq==20.0.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/69/4f/99153a0a89e3c6d2cb81f23e457680d173b7b434946ede602efc4bad30a2/pyzmq-20.0.0-cp37-cp37m-win\_amd64.whl (1.0 MB)

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Collecting requests==2.25.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/39/fc/f91eac5a39a65f75a7adb58eac7fa78871ea9872283fb9c44e6545998134/requests-2.25.0-py2.py3-none-any.whl (61 kB)

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Collecting scikit-learn

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9d/20/0ffe8665a44bce7616bd33d4368a198fecad3b226bcafa38c63ef0f6286f/scikit\_learn-1.0.2-cp37-cp37m-win\_amd64.whl (7.1 MB)

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Collecting scipy==1.5.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/0e/d2/1a6ec41bca8722b56aa779313391ee46595085d0ceefa49b5acd308c7a38/scipy-1.5.4-cp37-cp37m-win\_amd64.whl (31.2 MB)

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Collecting seaborn==0.11.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/68/ad/6c2406ae175f59ec616714e408979b674fe27b9587f79d59a528ddfbcd5b/seaborn-0.11.1-py3-none-any.whl (285 kB)

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Collecting six

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d9/5a/e7c31adbe875f2abbb91bd84cf2dc52d792b5a01506781dbcf25c91daf11/six-1.16.0-py2.py3-none-any.whl (11 kB)

Collecting threadpoolctl

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/61/cf/6e354304bcb9c6413c4e02a747b600061c21d38ba51e7e544ac7bc66aecc/threadpoolctl-3.1.0-py3-none-any.whl (14 kB)

Collecting torch==1.7.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/24/44/2b66a46b8ce7895a96db1a6dc525d9a9910353f7ca323bf04d0753603f18/torch-1.7.0-cp37-cp37m-win\_amd64.whl (184.0 MB)

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ERROR: torch has an invalid wheel, torch has an invalid wheel, .dist-info directory not found

(sandianqi) D:\TransPHLA-AOMP-master>pip install --upgrade pip

Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

Requirement already satisfied: pip in d:\py\anaconda3\envs\sandianqi\lib\site-packages (24.0)

(sandianqi) D:\TransPHLA-AOMP-master>pip install torch==1.7.0

Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

Collecting torch==1.7.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/24/44/2b66a46b8ce7895a96db1a6dc525d9a9910353f7ca323bf04d0753603f18/torch-1.7.0-cp37-cp37m-win\_amd64.whl (184.0 MB)

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ERROR: torch has an invalid wheel, torch has an invalid wheel, .dist-info directory not found

(sandianqi) D:\TransPHLA-AOMP-master>conda install torch==1.7.0

Collecting package metadata (current\_repodata.json): done

Solving environment: failed with initial frozen solve. Retrying with flexible solve.

Collecting package metadata (repodata.json): done

Solving environment: failed with initial frozen solve. Retrying with flexible solve.

PackagesNotFoundError: The following packages are not available from current channels:

- torch==1.7.0

Current channels:

- https://mirrors.tuna.tsinghua.edu.cn/anaconda/cloud/conda-forge/win-64

- https://mirrors.tuna.tsinghua.edu.cn/anaconda/cloud/conda-forge/noarch

- https://mirrors.tuna.tsinghua.edu.cn/anaconda/pkgs/main/win-64

- https://mirrors.tuna.tsinghua.edu.cn/anaconda/pkgs/main/noarch

- https://mirrors.tuna.tsinghua.edu.cn/anaconda/pkgs/r/win-64

- https://mirrors.tuna.tsinghua.edu.cn/anaconda/pkgs/r/noarch

- https://mirrors.tuna.tsinghua.edu.cn/anaconda/pkgs/msys2/win-64

- https://mirrors.tuna.tsinghua.edu.cn/anaconda/pkgs/msys2/noarch

To search for alternate channels that may provide the conda package you're

looking for, navigate to

https://anaconda.org

and use the search bar at the top of the page.

(sandianqi) D:\TransPHLA-AOMP-master>pip install torch==1.7.0+cu110 -f https://download.pytorch.org/whl/torch\_stable.html

Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

Looking in links: https://download.pytorch.org/whl/torch\_stable.html

Collecting torch==1.7.0+cu110

Downloading https://download.pytorch.org/whl/cu110/torch-1.7.0%2Bcu110-cp37-cp37m-win\_amd64.whl (2046.8 MB)

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ERROR: Operation cancelled by user

Could not fetch URL https://download.pytorch.org/whl/torch\_stable.html: There was a problem confirming the ssl certificate: HTTPSConnectionPool(host='download.pytorch.org', port=443): Max retries exceeded with url: /whl/torch\_stable.html (Caused by SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))) - skipping

Traceback (most recent call last):

File "D:\py\Anaconda3\envs\sandianqi\Scripts\pip-script.py", line 9, in <module>

sys.exit(main())

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\cli\main.py", line 79, in main

return command.main(cmd\_args)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\cli\base\_command.py", line 101, in main

return self.\_main(args)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\cli\base\_command.py", line 236, in \_main

self.handle\_pip\_version\_check(options)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\cli\req\_command.py", line 188, in handle\_pip\_version\_check

pip\_self\_version\_check(session, options)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\self\_outdated\_check.py", line 241, in pip\_self\_version\_check

\_get\_current\_remote\_pip\_version, session, options

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\self\_outdated\_check.py", line 199, in \_self\_version\_check\_logic

remote\_version\_str = get\_remote\_version()

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\self\_outdated\_check.py", line 183, in \_get\_current\_remote\_pip\_version

best\_candidate = finder.find\_best\_candidate("pip").best\_candidate

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\package\_finder.py", line 890, in find\_best\_candidate

candidates = self.find\_all\_candidates(project\_name)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\package\_finder.py", line 831, in find\_all\_candidates

page\_candidates = list(page\_candidates\_it)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\sources.py", line 194, in page\_candidates

yield from self.\_candidates\_from\_page(self.\_link)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\package\_finder.py", line 791, in process\_project\_url

index\_response = self.\_link\_collector.fetch\_response(project\_url)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\collector.py", line 461, in fetch\_response

return \_get\_index\_content(location, session=self.session)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\collector.py", line 364, in \_get\_index\_content

resp = \_get\_simple\_response(url, session=session)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\collector.py", line 158, in \_get\_simple\_response

"Cache-Control": "max-age=0",

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\requests\sessions.py", line 602, in get

return self.request("GET", url, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\network\session.py", line 520, in request

return super().request(method, url, \*args, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\requests\sessions.py", line 589, in request

resp = self.send(prep, \*\*send\_kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\requests\sessions.py", line 703, in send

r = adapter.send(request, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\requests\adapters.py", line 497, in send

chunked=chunked,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\connectionpool.py", line 711, in urlopen

self.\_prepare\_proxy(conn)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\connectionpool.py", line 1007, in \_prepare\_proxy

conn.connect()

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\connection.py", line 369, in connect

self.sock = conn = self.\_connect\_tls\_proxy(hostname, conn)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\connection.py", line 510, in \_connect\_tls\_proxy

ssl\_context=ssl\_context,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\util\ssl\_.py", line 402, in ssl\_wrap\_socket

context.load\_verify\_locations(ca\_certs, ca\_cert\_dir, ca\_cert\_data)

KeyboardInterrupt

^C

(sandianqi) D:\TransPHLA-AOMP-master>pip install torch==1.7.0+cu110 -f https://download.pytorch.org/whl/torch\_stable.html

Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

Looking in links: https://download.pytorch.org/whl/torch\_stable.html

WARNING: Retrying (Retry(total=4, connect=None, read=None, redirect=None, status=None)) after connection broken by 'SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))': /whl/torch\_stable.html

WARNING: Retrying (Retry(total=3, connect=None, read=None, redirect=None, status=None)) after connection broken by 'SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))': /whl/torch\_stable.html

WARNING: Retrying (Retry(total=2, connect=None, read=None, redirect=None, status=None)) after connection broken by 'SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))': /whl/torch\_stable.html

ERROR: Operation cancelled by user

Could not fetch URL https://download.pytorch.org/whl/torch\_stable.html: There was a problem confirming the ssl certificate: HTTPSConnectionPool(host='download.pytorch.org', port=443): Max retries exceeded with url: /whl/torch\_stable.html (Caused by SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))) - skipping

Traceback (most recent call last):

File "D:\py\Anaconda3\envs\sandianqi\Scripts\pip-script.py", line 9, in <module>

sys.exit(main())

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\cli\main.py", line 79, in main

return command.main(cmd\_args)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\cli\base\_command.py", line 101, in main

return self.\_main(args)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\cli\base\_command.py", line 236, in \_main

self.handle\_pip\_version\_check(options)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\cli\req\_command.py", line 188, in handle\_pip\_version\_check

pip\_self\_version\_check(session, options)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\self\_outdated\_check.py", line 241, in pip\_self\_version\_check

\_get\_current\_remote\_pip\_version, session, options

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\self\_outdated\_check.py", line 199, in \_self\_version\_check\_logic

remote\_version\_str = get\_remote\_version()

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\self\_outdated\_check.py", line 183, in \_get\_current\_remote\_pip\_version

best\_candidate = finder.find\_best\_candidate("pip").best\_candidate

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\package\_finder.py", line 890, in find\_best\_candidate

candidates = self.find\_all\_candidates(project\_name)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\package\_finder.py", line 831, in find\_all\_candidates

page\_candidates = list(page\_candidates\_it)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\sources.py", line 194, in page\_candidates

yield from self.\_candidates\_from\_page(self.\_link)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\package\_finder.py", line 791, in process\_project\_url

index\_response = self.\_link\_collector.fetch\_response(project\_url)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\collector.py", line 461, in fetch\_response

return \_get\_index\_content(location, session=self.session)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\collector.py", line 364, in \_get\_index\_content

resp = \_get\_simple\_response(url, session=session)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\collector.py", line 158, in \_get\_simple\_response

"Cache-Control": "max-age=0",

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\requests\sessions.py", line 602, in get

return self.request("GET", url, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\network\session.py", line 520, in request

return super().request(method, url, \*args, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\requests\sessions.py", line 589, in request

resp = self.send(prep, \*\*send\_kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\requests\sessions.py", line 703, in send

r = adapter.send(request, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\requests\adapters.py", line 497, in send

chunked=chunked,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\connectionpool.py", line 711, in urlopen

self.\_prepare\_proxy(conn)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\connectionpool.py", line 1007, in \_prepare\_proxy

conn.connect()

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\connection.py", line 369, in connect

self.sock = conn = self.\_connect\_tls\_proxy(hostname, conn)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\connection.py", line 510, in \_connect\_tls\_proxy

ssl\_context=ssl\_context,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\util\ssl\_.py", line 402, in ssl\_wrap\_socket

context.load\_verify\_locations(ca\_certs, ca\_cert\_dir, ca\_cert\_data)

KeyboardInterrupt

^C

(sandianqi) D:\TransPHLA-AOMP-master>

(sandianqi) D:\TransPHLA-AOMP-master>

(sandianqi) D:\TransPHLA-AOMP-master>pip install torch==1.7.0+cu110 -f https://download.pytorch.org/whl/torch\_stable.html

Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

Looking in links: https://download.pytorch.org/whl/torch\_stable.html

WARNING: Retrying (Retry(total=4, connect=None, read=None, redirect=None, status=None)) after connection broken by 'SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))': /whl/torch\_stable.html

WARNING: Retrying (Retry(total=3, connect=None, read=None, redirect=None, status=None)) after connection broken by 'SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))': /whl/torch\_stable.html

WARNING: Retrying (Retry(total=2, connect=None, read=None, redirect=None, status=None)) after connection broken by 'SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))': /whl/torch\_stable.html

WARNING: Retrying (Retry(total=1, connect=None, read=None, redirect=None, status=None)) after connection broken by 'SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))': /whl/torch\_stable.html

WARNING: Retrying (Retry(total=0, connect=None, read=None, redirect=None, status=None)) after connection broken by 'SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))': /whl/torch\_stable.html

Could not fetch URL https://download.pytorch.org/whl/torch\_stable.html: There was a problem confirming the ssl certificate: HTTPSConnectionPool(host='download.pytorch.org', port=443): Max retries exceeded with url: /whl/torch\_stable.html (Caused by SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))) - skipping

WARNING: Retrying (Retry(total=4, connect=None, read=None, redirect=None, status=None)) after connection broken by 'SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))': /simple/torch/

WARNING: Retrying (Retry(total=3, connect=None, read=None, redirect=None, status=None)) after connection broken by 'SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))': /simple/torch/

WARNING: Retrying (Retry(total=2, connect=None, read=None, redirect=None, status=None)) after connection broken by 'SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))': /simple/torch/

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ERROR: Operation cancelled by user

Traceback (most recent call last):

File "D:\py\Anaconda3\envs\sandianqi\Scripts\pip-script.py", line 9, in <module>

sys.exit(main())

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\cli\main.py", line 79, in main

return command.main(cmd\_args)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\cli\base\_command.py", line 101, in main

return self.\_main(args)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\cli\base\_command.py", line 236, in \_main

self.handle\_pip\_version\_check(options)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\cli\req\_command.py", line 188, in handle\_pip\_version\_check

pip\_self\_version\_check(session, options)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\self\_outdated\_check.py", line 241, in pip\_self\_version\_check

\_get\_current\_remote\_pip\_version, session, options

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\self\_outdated\_check.py", line 199, in \_self\_version\_check\_logic

remote\_version\_str = get\_remote\_version()

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\self\_outdated\_check.py", line 183, in \_get\_current\_remote\_pip\_version

best\_candidate = finder.find\_best\_candidate("pip").best\_candidate

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\package\_finder.py", line 890, in find\_best\_candidate

candidates = self.find\_all\_candidates(project\_name)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\package\_finder.py", line 831, in find\_all\_candidates

page\_candidates = list(page\_candidates\_it)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\sources.py", line 194, in page\_candidates

yield from self.\_candidates\_from\_page(self.\_link)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\package\_finder.py", line 791, in process\_project\_url

index\_response = self.\_link\_collector.fetch\_response(project\_url)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\collector.py", line 461, in fetch\_response

return \_get\_index\_content(location, session=self.session)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\collector.py", line 364, in \_get\_index\_content

resp = \_get\_simple\_response(url, session=session)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\collector.py", line 158, in \_get\_simple\_response

"Cache-Control": "max-age=0",

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\requests\sessions.py", line 602, in get

return self.request("GET", url, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\network\session.py", line 520, in request

return super().request(method, url, \*args, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\requests\sessions.py", line 589, in request

resp = self.send(prep, \*\*send\_kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\requests\sessions.py", line 703, in send

r = adapter.send(request, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\requests\adapters.py", line 497, in send

chunked=chunked,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\connectionpool.py", line 711, in urlopen

self.\_prepare\_proxy(conn)

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conn.connect()

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\connection.py", line 369, in connect

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File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\connection.py", line 510, in \_connect\_tls\_proxy

ssl\_context=ssl\_context,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\util\ssl\_.py", line 402, in ssl\_wrap\_socket

context.load\_verify\_locations(ca\_certs, ca\_cert\_dir, ca\_cert\_data)

KeyboardInterrupt

(sandianqi) D:\TransPHLA-AOMP-master>cd C:\Users\czh\Downloads

(sandianqi) D:\TransPHLA-AOMP-master>C:

(sandianqi) C:\Users\czh\Downloads>cd C:\Users\czh\Downloads

(sandianqi) C:\Users\czh\Downloads>pip install torch-1.7.0+cu110-cp37-cp37m-win\_amd64.whl

Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

Processing c:\users\czh\downloads\torch-1.7.0+cu110-cp37-cp37m-win\_amd64.whl

WARNING: Retrying (Retry(total=4, connect=None, read=None, redirect=None, status=None)) after connection broken by 'SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))': /simple/future/

WARNING: Retrying (Retry(total=3, connect=None, read=None, redirect=None, status=None)) after connection broken by 'SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))': /simple/future/

WARNING: Retrying (Retry(total=2, connect=None, read=None, redirect=None, status=None)) after connection broken by 'SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))': /simple/future/

WARNING: Retrying (Retry(total=1, connect=None, read=None, redirect=None, status=None)) after connection broken by 'SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))': /simple/future/

WARNING: Retrying (Retry(total=0, connect=None, read=None, redirect=None, status=None)) after connection broken by 'SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))': /simple/future/

Could not fetch URL https://pypi.tuna.tsinghua.edu.cn/simple/future/: There was a problem confirming the ssl certificate: HTTPSConnectionPool(host='pypi.tuna.tsinghua.edu.cn', port=443): Max retries exceeded with url: /simple/future/ (Caused by SSLError(SSLError(1, '[SSL: KRB5\_S\_TKT\_NYV] unexpected eof while reading (\_ssl.c:1091)'))) - skipping

ERROR: Operation cancelled by user

Traceback (most recent call last):

File "D:\py\Anaconda3\envs\sandianqi\Scripts\pip-script.py", line 9, in <module>

sys.exit(main())

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\cli\main.py", line 79, in main

return command.main(cmd\_args)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\cli\base\_command.py", line 101, in main

return self.\_main(args)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\cli\base\_command.py", line 236, in \_main

self.handle\_pip\_version\_check(options)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\cli\req\_command.py", line 188, in handle\_pip\_version\_check

pip\_self\_version\_check(session, options)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\self\_outdated\_check.py", line 241, in pip\_self\_version\_check

\_get\_current\_remote\_pip\_version, session, options

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\self\_outdated\_check.py", line 199, in \_self\_version\_check\_logic

remote\_version\_str = get\_remote\_version()

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\self\_outdated\_check.py", line 183, in \_get\_current\_remote\_pip\_version

best\_candidate = finder.find\_best\_candidate("pip").best\_candidate

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\package\_finder.py", line 890, in find\_best\_candidate

candidates = self.find\_all\_candidates(project\_name)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\package\_finder.py", line 831, in find\_all\_candidates

page\_candidates = list(page\_candidates\_it)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\sources.py", line 194, in page\_candidates

yield from self.\_candidates\_from\_page(self.\_link)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\package\_finder.py", line 791, in process\_project\_url

index\_response = self.\_link\_collector.fetch\_response(project\_url)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\collector.py", line 461, in fetch\_response

return \_get\_index\_content(location, session=self.session)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\collector.py", line 364, in \_get\_index\_content

resp = \_get\_simple\_response(url, session=session)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\index\collector.py", line 158, in \_get\_simple\_response

"Cache-Control": "max-age=0",

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\requests\sessions.py", line 602, in get

return self.request("GET", url, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_internal\network\session.py", line 520, in request

return super().request(method, url, \*args, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\requests\sessions.py", line 589, in request

resp = self.send(prep, \*\*send\_kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\requests\sessions.py", line 703, in send

r = adapter.send(request, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\requests\adapters.py", line 497, in send

chunked=chunked,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\connectionpool.py", line 721, in urlopen

chunked=chunked,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\connectionpool.py", line 403, in \_make\_request

self.\_validate\_conn(conn)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\connectionpool.py", line 1053, in \_validate\_conn

conn.connect()

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\connection.py", line 429, in connect

tls\_in\_tls=tls\_in\_tls,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\util\ssl\_.py", line 450, in ssl\_wrap\_socket

sock, context, tls\_in\_tls, server\_hostname=server\_hostname

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pip\\_vendor\urllib3\util\ssl\_.py", line 493, in \_ssl\_wrap\_socket\_impl

return ssl\_context.wrap\_socket(sock, server\_hostname=server\_hostname)

File "D:\py\Anaconda3\envs\sandianqi\lib\ssl.py", line 423, in wrap\_socket

session=session

File "D:\py\Anaconda3\envs\sandianqi\lib\ssl.py", line 870, in \_create

self.do\_handshake()

File "D:\py\Anaconda3\envs\sandianqi\lib\ssl.py", line 1139, in do\_handshake

self.\_sslobj.do\_handshake()

KeyboardInterrupt

(sandianqi) C:\Users\czh\Downloads>pip install torch-1.7.0+cu110-cp37-cp37m-win\_amd64.whl

Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

Processing c:\users\czh\downloads\torch-1.7.0+cu110-cp37-cp37m-win\_amd64.whl

Collecting future (from torch==1.7.0+cu110)

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/da/71/ae30dadffc90b9006d77af76b393cb9dfbfc9629f339fc1574a1c52e6806/future-1.0.0-py3-none-any.whl (491 kB)

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Collecting typing-extensions (from torch==1.7.0+cu110)

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/ec/6b/63cc3df74987c36fe26157ee12e09e8f9db4de771e0f3404263117e75b95/typing\_extensions-4.7.1-py3-none-any.whl (33 kB)

Collecting dataclasses (from torch==1.7.0+cu110)

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/26/2f/1095cdc2868052dd1e64520f7c0d5c8c550ad297e944e641dbf1ffbb9a5d/dataclasses-0.6-py3-none-any.whl (14 kB)

Requirement already satisfied: numpy in d:\py\anaconda3\envs\sandianqi\lib\site-packages (from torch==1.7.0+cu110) (1.20.0)

Installing collected packages: dataclasses, typing-extensions, future, torch

Successfully installed dataclasses-0.6 future-1.0.0 torch-1.7.0+cu110 typing-extensions-4.7.1

(sandianqi) C:\Users\czh\Downloads>pip install backcall==0.2.0 certifi==2020.12.5 chardet==3.0.4 cycler==0.10.0 decorator==4.4.2 dgl-cu110==0.5.3 et-xmlfile==1.0.1 graphviz==0.8.4 idna==2.10 ipykernel==5.3.4 ipython==7.19.0 ipython-genutils==0.2.0 iterative-stratification==0.1.6 jdcal==1.4.1 jedi==0.17.2 joblib jupyter-client==6.1.7 jupyter-core==4.7.0 kiwisolver==1.3.1 llvmlite==0.35.0 matplotlib==3.3.3 mkl-fft==1.2.0 mkl-random==1.2.0 mkl-service==2.3.0 networkx==2.5 numba==0.52.0 olefile openpyxl==3.0.6 pandas==1.2.0 parso==0.7.1 pexpect==4.8.0 pickleshare==0.7.5 Pillow prompt-toolkit==3.0.8 ptyprocess==0.6.0 Pygments==2.7.3 pyparsing==2.4.7 python-dateutil==2.8.1 pytorchtools==0.0.2 pytz==2020.5 pyzmq==20.0.0 requests==2.25.0 scikit-learn scipy==1.5.4 seaborn==0.11.1 six threadpoolctl torchaudio==0.7.0 torchsummary==1.5.1 torchvision==0.8.1 tornado==6.1 tqdm==4.54.1 traitlets==5.0.5 typing-extensions urllib3==1.26.2 wcwidth==0.2.5 xlrd==1.2.0

Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

Collecting backcall==0.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/4c/1c/ff6546b6c12603d8dd1070aa3c3d273ad4c07f5771689a7b69a550e8c951/backcall-0.2.0-py2.py3-none-any.whl (11 kB)

Collecting certifi==2020.12.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/5e/a0/5f06e1e1d463903cf0c0eebeb751791119ed7a4b3737fdc9a77f1cdfb51f/certifi-2020.12.5-py2.py3-none-any.whl (147 kB)

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Collecting chardet==3.0.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/bc/a9/01ffebfb562e4274b6487b4bb1ddec7ca55ec7510b22e4c51f14098443b8/chardet-3.0.4-py2.py3-none-any.whl (133 kB)

━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 133.4/133.4 kB 7.7 MB/s eta 0:00:00

Collecting cycler==0.10.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f7/d2/e07d3ebb2bd7af696440ce7e754c59dd546ffe1bbe732c8ab68b9c834e61/cycler-0.10.0-py2.py3-none-any.whl (6.5 kB)

Collecting decorator==4.4.2

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/ed/1b/72a1821152d07cf1d8b6fce298aeb06a7eb90f4d6d41acec9861e7cc6df0/decorator-4.4.2-py2.py3-none-any.whl (9.2 kB)

Collecting dgl-cu110==0.5.3

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/74/0c/2c1186c1050b6512cc101427fd8e7c1232435ac45bed1fcd8091c0872ce2/dgl\_cu110-0.5.3-cp37-cp37m-win\_amd64.whl (25.6 MB)

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Collecting et-xmlfile==1.0.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/22/28/a99c42aea746e18382ad9fb36f64c1c1f04216f41797f2f0fa567da11388/et\_xmlfile-1.0.1.tar.gz (8.4 kB)

Preparing metadata (setup.py) ... done

Collecting graphviz==0.8.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/53/39/4ab213673844e0c004bed8a0781a0721a3f6bb23eb8854ee75c236428892/graphviz-0.8.4-py2.py3-none-any.whl (16 kB)

Collecting idna==2.10

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/a2/38/928ddce2273eaa564f6f50de919327bf3a00f091b5baba8dfa9460f3a8a8/idna-2.10-py2.py3-none-any.whl (58 kB)

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Collecting ipykernel==5.3.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/52/19/c2812690d8b340987eecd2cbc18549b1d130b94c5d97fcbe49f5f8710edf/ipykernel-5.3.4-py3-none-any.whl (120 kB)

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Collecting ipython==7.19.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/e0/c7/1c91a71b413c82cd4c49fb8b6676f6135650cd2cca2745a96bd84a56166c/ipython-7.19.0-py3-none-any.whl (784 kB)

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Collecting ipython-genutils==0.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/fa/bc/9bd3b5c2b4774d5f33b2d544f1460be9df7df2fe42f352135381c347c69a/ipython\_genutils-0.2.0-py2.py3-none-any.whl (26 kB)

Collecting iterative-stratification==0.1.6

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9d/79/9ba64c8c07b07b8b45d80725b2ebd7b7884701c1da34f70d4749f7b45f9a/iterative\_stratification-0.1.6-py3-none-any.whl (8.7 kB)

Collecting jdcal==1.4.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f0/da/572cbc0bc582390480bbd7c4e93d14dc46079778ed915b505dc494b37c57/jdcal-1.4.1-py2.py3-none-any.whl (9.5 kB)

Collecting jedi==0.17.2

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/c3/d4/36136b18daae06ad798966735f6c3fb96869c1be9f8245d2a8f556e40c36/jedi-0.17.2-py2.py3-none-any.whl (1.4 MB)

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Collecting joblib

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/10/40/d551139c85db202f1f384ba8bcf96aca2f329440a844f924c8a0040b6d02/joblib-1.3.2-py3-none-any.whl (302 kB)

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Collecting jupyter-client==6.1.7

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/dc/41/9fa443d5ae8907dd8f7d12146cb0092dc053afd67b5b57e7e8786a328547/jupyter\_client-6.1.7-py3-none-any.whl (108 kB)

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Collecting jupyter-core==4.7.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f4/34/ba811d7e4b5374e70fc3801d932966979e252e5c1a99eddb32ce63ec54e6/jupyter\_core-4.7.0-py3-none-any.whl (82 kB)

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Collecting kiwisolver==1.3.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/b2/55/6681ac2cc8de9bb612b1a777606e5beef240bf63aaa6cb03f44af5f42a77/kiwisolver-1.3.1-cp37-cp37m-win\_amd64.whl (51 kB)

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Collecting llvmlite==0.35.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/54/46/1abf8a9cefed0647283d4e9500976512fa925b5302d397c1f018528e6f1b/llvmlite-0.35.0-cp37-cp37m-win\_amd64.whl (16.0 MB)

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Collecting matplotlib==3.3.3

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/24/02/202982cbc4ab7a5a87c7f8d16e51d464016af742d5fb2d2b6b23116caec5/matplotlib-3.3.3-cp37-cp37m-win\_amd64.whl (8.5 MB)

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Collecting mkl-fft==1.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d2/80/8f6aeafe4b1d97ecf824f5b5b6986b401242444f5be4a490918ca2ebc162/mkl\_fft-1.2.0-10-cp37-cp37m-win\_amd64.whl (224 kB)

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Collecting mkl-random==1.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/0f/f0/67d8e81c6f8fcd5ecc029262e48d3a6e32e537447110930ac93b7ef21c96/mkl\_random-1.2.0-10-cp37-cp37m-win\_amd64.whl (361 kB)

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Collecting mkl-service==2.3.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/27/6b/7b1329f7fcb8ee661560c1da1c42fdb64136f23de9b8d29d7703e05445b3/mkl\_service-2.3.0-10-cp37-cp37m-win\_amd64.whl (42 kB)

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Collecting networkx==2.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9b/cd/dc52755d30ba41c60243235460961fc28022e5b6731f16c268667625baea/networkx-2.5-py3-none-any.whl (1.6 MB)

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Collecting numba==0.52.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/e8/f8/87b899da6ff667de4e41a3b614edd8a0d20e179bf2c562dba6ff399483ad/numba-0.52.0-cp37-cp37m-win\_amd64.whl (2.3 MB)

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Collecting olefile

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/17/d3/b64c356a907242d719fc668b71befd73324e47ab46c8ebbbede252c154b2/olefile-0.47-py2.py3-none-any.whl (114 kB)

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Collecting openpyxl==3.0.6

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d4/c5/1a5f82b3020bfb27f21b302f96c8ae6a34475070015d1b1e0b197a97e2af/openpyxl-3.0.6-py2.py3-none-any.whl (242 kB)

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Collecting pandas==1.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/11/57/ae7d1ce265e057b2b44e25f9dec0b1d38e7a0e5458fc8d502ab9abf50e75/pandas-1.2.0-cp37-cp37m-win\_amd64.whl (9.1 MB)

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Collecting parso==0.7.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/93/d1/e635bdde32890db5aeb2ffbde17e74f68986305a4466b0aa373b861e3f00/parso-0.7.1-py2.py3-none-any.whl (109 kB)

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Collecting pexpect==4.8.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/39/7b/88dbb785881c28a102619d46423cb853b46dbccc70d3ac362d99773a78ce/pexpect-4.8.0-py2.py3-none-any.whl (59 kB)

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Collecting pickleshare==0.7.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9a/41/220f49aaea88bc6fa6cba8d05ecf24676326156c23b991e80b3f2fc24c77/pickleshare-0.7.5-py2.py3-none-any.whl (6.9 kB)

Collecting Pillow

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/cb/3c/4f3ef1a14e903d7b2bc43672c20f732b874e1e50a9a58ac9a1726ef3773d/Pillow-9.5.0-cp37-cp37m-win\_amd64.whl (2.5 MB)

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Collecting prompt-toolkit==3.0.8

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/8a/aa/198e6a857e83ea8b711a6ae0c37717c0eb1b23ff52e3732a644fcd389cb3/prompt\_toolkit-3.0.8-py3-none-any.whl (355 kB)

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Collecting ptyprocess==0.6.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d1/29/605c2cc68a9992d18dada28206eeada56ea4bd07a239669da41674648b6f/ptyprocess-0.6.0-py2.py3-none-any.whl (39 kB)

Collecting Pygments==2.7.3

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/85/c5/c437c383d5917fae9782eb6588bec8aff931afe13c76b9e8c03dacee9beb/Pygments-2.7.3-py3-none-any.whl (950 kB)

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Collecting pyparsing==2.4.7

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/8a/bb/488841f56197b13700afd5658fc279a2025a39e22449b7cf29864669b15d/pyparsing-2.4.7-py2.py3-none-any.whl (67 kB)

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Collecting python-dateutil==2.8.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d4/70/d60450c3dd48ef87586924207ae8907090de0b306af2bce5d134d78615cb/python\_dateutil-2.8.1-py2.py3-none-any.whl (227 kB)

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Collecting pytorchtools==0.0.2

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/07/7d/91fc993eed451ff2aff02e09a8e0246125b72cbc7068cb94242ca2c0e72f/pytorchtools-0.0.2-py2.py3-none-any.whl (3.1 kB)

Collecting pytz==2020.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/89/06/2c2d3034b4d6bf22f2a4ae546d16925898658a33b4400cfb7e2c1e2871a3/pytz-2020.5-py2.py3-none-any.whl (510 kB)

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Collecting pyzmq==20.0.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/69/4f/99153a0a89e3c6d2cb81f23e457680d173b7b434946ede602efc4bad30a2/pyzmq-20.0.0-cp37-cp37m-win\_amd64.whl (1.0 MB)

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Collecting requests==2.25.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/39/fc/f91eac5a39a65f75a7adb58eac7fa78871ea9872283fb9c44e6545998134/requests-2.25.0-py2.py3-none-any.whl (61 kB)

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Collecting scikit-learn

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9d/20/0ffe8665a44bce7616bd33d4368a198fecad3b226bcafa38c63ef0f6286f/scikit\_learn-1.0.2-cp37-cp37m-win\_amd64.whl (7.1 MB)

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Collecting scipy==1.5.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/0e/d2/1a6ec41bca8722b56aa779313391ee46595085d0ceefa49b5acd308c7a38/scipy-1.5.4-cp37-cp37m-win\_amd64.whl (31.2 MB)

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Collecting seaborn==0.11.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/68/ad/6c2406ae175f59ec616714e408979b674fe27b9587f79d59a528ddfbcd5b/seaborn-0.11.1-py3-none-any.whl (285 kB)

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Collecting six

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d9/5a/e7c31adbe875f2abbb91bd84cf2dc52d792b5a01506781dbcf25c91daf11/six-1.16.0-py2.py3-none-any.whl (11 kB)

Collecting threadpoolctl

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/61/cf/6e354304bcb9c6413c4e02a747b600061c21d38ba51e7e544ac7bc66aecc/threadpoolctl-3.1.0-py3-none-any.whl (14 kB)

ERROR: Ignored the following versions that require a different python version: 0.12.0 Requires-Python >=3.8; 0.12.0rc1 Requires-Python >=3.8; 0.12.1 Requires-Python >=3.8; 0.13.0 Requires-Python >=3.8; 0.13.0rc0 Requires-Python >=3.8; 0.13.1 Requires-Python >=3.8; 0.13.2 Requires-Python >=3.8; 0.20.2 Requires-Python >=3.8; 0.20.3 Requires-Python >=3.8; 0.40.0 Requires-Python >=3.8; 0.40.0rc1 Requires-Python >=3.8; 0.40.1 Requires-Python >=3.8; 0.40.1rc1 Requires-Python >=3.8; 0.41.0 Requires-Python >=3.8; 0.41.0rc1 Requires-Python >=3.8; 0.41.1 Requires-Python >=3.8; 0.42.0 Requires-Python >=3.9; 0.42.0rc1 Requires-Python >=3.9; 0.43.0 Requires-Python >=3.9; 0.43.0rc1 Requires-Python >=3.9; 0.57.0 Requires-Python >=3.8; 0.57.0rc1 Requires-Python >=3.8; 0.57.1 Requires-Python >=3.8; 0.57.1rc1 Requires-Python >=3.8; 0.58.0 Requires-Python >=3.8; 0.58.0rc1 Requires-Python >=3.8; 0.58.0rc2 Requires-Python >=3.8; 0.58.1 Requires-Python >=3.8; 0.59.0 Requires-Python >=3.9; 0.59.0rc1 Requires-Python >=3.9; 0.59.1 Requires-Python >=3.9; 0.60.0 Requires-Python >=3.9; 0.60.0rc1 Requires-Python >=3.9; 1.1.0 Requires-Python >=3.8; 1.1.1 Requires-Python >=3.8; 1.1.2 Requires-Python >=3.8; 1.1.3 Requires-Python >=3.8; 1.10.0 Requires-Python <3.12,>=3.8; 1.10.0rc1 Requires-Python <3.12,>=3.8; 1.10.0rc2 Requires-Python <3.12,>=3.8; 1.10.1 Requires-Python <3.12,>=3.8; 1.11.0 Requires-Python <3.13,>=3.9; 1.11.0rc1 Requires-Python <3.13,>=3.9; 1.11.0rc2 Requires-Python <3.13,>=3.9; 1.11.1 Requires-Python <3.13,>=3.9; 1.11.2 Requires-Python <3.13,>=3.9; 1.11.3 Requires-Python <3.13,>=3.9; 1.11.4 Requires-Python >=3.9; 1.12.0 Requires-Python >=3.9; 1.12.0rc1 Requires-Python >=3.9; 1.12.0rc2 Requires-Python >=3.9; 1.13.0 Requires-Python >=3.9; 1.13.0rc1 Requires-Python >=3.9; 1.13.1 Requires-Python >=3.9; 1.14.0rc1 Requires-Python >=3.10; 1.14.0rc2 Requires-Python >=3.10; 1.2.0 Requires-Python >=3.8; 1.2.0rc1 Requires-Python >=3.8; 1.2.1 Requires-Python >=3.8; 1.2.2 Requires-Python >=3.8; 1.3.0 Requires-Python >=3.8; 1.3.0rc1 Requires-Python >=3.8; 1.3.1 Requires-Python >=3.8; 1.3.2 Requires-Python >=3.8; 1.4.0 Requires-Python >=3.8; 1.4.0 Requires-Python >=3.9; 1.4.0rc0 Requires-Python >=3.8; 1.4.0rc1 Requires-Python >=3.9; 1.4.1 Requires-Python >=3.8; 1.4.1.post1 Requires-Python >=3.9; 1.4.2 Requires-Python >=3.8; 1.4.2 Requires-Python >=3.9; 1.4.3 Requires-Python >=3.8; 1.4.4 Requires-Python >=3.8; 1.5.0 Requires-Python >=3.8; 1.5.0 Requires-Python >=3.9; 1.5.0rc0 Requires-Python >=3.8; 1.5.0rc1 Requires-Python >=3.9; 1.5.1 Requires-Python >=3.8; 1.5.2 Requires-Python >=3.8; 1.5.3 Requires-Python >=3.8; 1.8.0 Requires-Python >=3.8,<3.11; 1.8.0rc1 Requires-Python >=3.8,<3.11; 1.8.0rc2 Requires-Python >=3.8,<3.11; 1.8.0rc3 Requires-Python >=3.8,<3.11; 1.8.0rc4 Requires-Python >=3.8,<3.11; 1.8.1 Requires-Python >=3.8,<3.11; 1.9.0 Requires-Python >=3.8,<3.12; 1.9.0rc1 Requires-Python >=3.8,<3.12; 1.9.0rc2 Requires-Python >=3.8,<3.12; 1.9.0rc3 Requires-Python >=3.8,<3.12; 1.9.1 Requires-Python >=3.8,<3.12; 1.9.2 Requires-Python >=3.8; 1.9.3 Requires-Python >=3.8; 10.0.0 Requires-Python >=3.8; 10.0.1 Requires-Python >=3.8; 10.1.0 Requires-Python >=3.8; 10.2.0 Requires-Python >=3.8; 10.3.0 Requires-Python >=3.8; 2.0.0 Requires-Python >=3.8; 2.0.0rc0 Requires-Python >=3.8; 2.0.0rc1 Requires-Python >=3.8; 2.0.1 Requires-Python >=3.8; 2.0.2 Requires-Python >=3.8; 2.0.3 Requires-Python >=3.8; 2.1.0 Requires-Python >=3.9; 2.1.0rc0 Requires-Python >=3.9; 2.1.1 Requires-Python >=3.9; 2.1.2 Requires-Python >=3.9; 2.1.3 Requires-Python >=3.9; 2.1.4 Requires-Python >=3.9; 2.18.0 Requires-Python >=3.8; 2.2.0 Requires-Python >=3.9; 2.2.0rc0 Requires-Python >=3.9; 2.2.1 Requires-Python >=3.9; 2.2.2 Requires-Python >=3.9; 2.32.0 Requires-Python >=3.8; 2.32.1 Requires-Python >=3.8; 2.32.2 Requires-Python >=3.8; 2.32.3 Requires-Python >=3.8; 2.7 Requires-Python >=3.8; 2.7.1 Requires-Python >=3.8; 2.7rc1 Requires-Python >=3.8; 2.8 Requires-Python >=3.8; 2.8.1 Requires-Python >=3.8; 2.8.1rc1 Requires-Python >=3.8; 2.8.2 Requires-Python >=3.8; 2.8.3 Requires-Python >=3.8; 2.8.4 Requires-Python >=3.8; 2.8.5 Requires-Python >=3.8; 2.8.6 Requires-Python >=3.8; 2.8.7 Requires-Python >=3.8; 2.8.8 Requires-Python >=3.8; 2.8rc1 Requires-Python >=3.8; 3.0 Requires-Python >=3.8; 3.0b1 Requires-Python >=3.8; 3.0rc1 Requires-Python >=3.8; 3.1 Requires-Python >=3.8; 3.1.4 Requires-Python >=3.8; 3.1rc0 Requires-Python >=3.8; 3.2 Requires-Python >=3.9; 3.2.0 Requires-Python >=3.8; 3.2.1 Requires-Python >=3.9; 3.2rc0 Requires-Python >=3.9; 3.3 Requires-Python >=3.10; 3.3.0 Requires-Python >=3.8; 3.3rc0 Requires-Python >=3.10; 3.4.0 Requires-Python >=3.8; 3.5.0 Requires-Python >=3.8; 3.6.0 Requires-Python >=3.8; 3.6.0rc1 Requires-Python >=3.8; 3.6.0rc2 Requires-Python >=3.8; 3.6.1 Requires-Python >=3.8; 3.6.2 Requires-Python >=3.8; 3.6.3 Requires-Python >=3.8; 3.7.0 Requires-Python >=3.8; 3.7.0rc1 Requires-Python >=3.8; 3.7.1 Requires-Python >=3.8; 3.7.2 Requires-Python >=3.8; 3.7.3 Requires-Python >=3.8; 3.7.4 Requires-Python >=3.8; 3.7.5 Requires-Python >=3.8; 3.8.0 Requires-Python >=3.9; 3.8.0rc1 Requires-Python >=3.9; 3.8.1 Requires-Python >=3.9; 3.8.2 Requires-Python >=3.9; 3.8.3 Requires-Python >=3.9; 3.8.4 Requires-Python >=3.9; 3.9.0 Requires-Python >=3.9; 3.9.0rc2 Requires-Python >=3.9; 5.0.0 Requires-Python >=3.8; 5.1.0 Requires-Python >=3.8; 5.1.1 Requires-Python >=3.8; 5.1.2 Requires-Python >=3.8; 5.1.3 Requires-Python >=3.8; 5.1.4 Requires-Python >=3.8; 5.1.5 Requires-Python >=3.8; 5.2.0 Requires-Python >=3.8; 5.3.0 Requires-Python >=3.8; 5.3.1 Requires-Python >=3.8; 5.3.2 Requires-Python >=3.8; 5.4.0 Requires-Python >=3.8; 5.5.0 Requires-Python >=3.8; 5.5.1 Requires-Python >=3.8; 5.6.0 Requires-Python >=3.8; 5.6.1 Requires-Python >=3.8; 5.7.0 Requires-Python >=3.8; 5.7.1 Requires-Python >=3.8; 5.7.2 Requires-Python >=3.8; 6.17.0 Requires-Python >=3.8; 6.17.1 Requires-Python >=3.8; 6.18.0 Requires-Python >=3.8; 6.18.1 Requires-Python >=3.8; 6.18.2 Requires-Python >=3.8; 6.18.3 Requires-Python >=3.8; 6.19.0 Requires-Python >=3.8; 6.19.1 Requires-Python >=3.8; 6.19.2 Requires-Python >=3.8; 6.19.3 Requires-Python >=3.8; 6.19.4 Requires-Python >=3.8; 6.20.0 Requires-Python >=3.8; 6.20.1 Requires-Python >=3.8; 6.20.2 Requires-Python >=3.8; 6.21.0 Requires-Python >=3.8; 6.21.1 Requires-Python >=3.8; 6.21.2 Requires-Python >=3.8; 6.21.3 Requires-Python >=3.8; 6.22.0 Requires-Python >=3.8; 6.23.0 Requires-Python >=3.8; 6.23.1 Requires-Python >=3.8; 6.23.2 Requires-Python >=3.8; 6.23.3 Requires-Python >=3.8; 6.24.0 Requires-Python >=3.8; 6.25.0 Requires-Python >=3.8; 6.25.1 Requires-Python >=3.8; 6.25.2 Requires-Python >=3.8; 6.26.0 Requires-Python >=3.8; 6.27.0 Requires-Python >=3.8; 6.27.1 Requires-Python >=3.8; 6.28.0 Requires-Python >=3.8; 6.29.0 Requires-Python >=3.8; 6.29.1 Requires-Python >=3.8; 6.29.2 Requires-Python >=3.8; 6.29.3 Requires-Python >=3.8; 6.29.4 Requires-Python >=3.8; 8.0.0 Requires-Python >=3.8; 8.0.0a1 Requires-Python >=3.8; 8.0.0a2 Requires-Python >=3.8; 8.0.0a3 Requires-Python >=3.8; 8.0.0a4 Requires-Python >=3.8; 8.0.0b0 Requires-Python >=3.8; 8.0.0b1 Requires-Python >=3.8; 8.0.0b2 Requires-Python >=3.8; 8.0.0b3 Requires-Python >=3.8; 8.0.0rc0 Requires-Python >=3.8; 8.0.0rc1 Requires-Python >=3.8; 8.0.1 Requires-Python >=3.8; 8.0.2 Requires-Python >=3.8; 8.0.3 Requires-Python >=3.8; 8.1.0 Requires-Python >=3.8; 8.1.1 Requires-Python >=3.8; 8.10.0 Requires-Python >=3.8; 8.11.0 Requires-Python >=3.8; 8.12.0 Requires-Python >=3.8; 8.12.1 Requires-Python >=3.8; 8.12.2 Requires-Python >=3.8; 8.12.3 Requires-Python >=3.8; 8.13.0 Requires-Python >=3.8; 8.13.1 Requires-Python >=3.9; 8.13.2 Requires-Python >=3.9; 8.14.0 Requires-Python >=3.9; 8.15.0 Requires-Python >=3.9; 8.16.0 Requires-Python >=3.9; 8.16.1 Requires-Python >=3.9; 8.17.0 Requires-Python >=3.9; 8.17.1 Requires-Python >=3.9; 8.17.2 Requires-Python >=3.9; 8.18.0 Requires-Python >=3.9; 8.18.1 Requires-Python >=3.9; 8.19.0 Requires-Python >=3.10; 8.2.0 Requires-Python >=3.8; 8.20.0 Requires-Python >=3.10; 8.21.0 Requires-Python >=3.10; 8.22.0 Requires-Python >=3.10; 8.22.1 Requires-Python >=3.10; 8.22.2 Requires-Python >=3.10; 8.23.0 Requires-Python >=3.10; 8.24.0 Requires-Python >=3.10; 8.25.0 Requires-Python >=3.10; 8.3.0 Requires-Python >=3.8; 8.3.1 Requires-Python >=3.8; 8.4.0 Requires-Python >=3.8; 8.5.0 Requires-Python >=3.8; 8.6.0 Requires-Python >=3.8; 8.6.1 Requires-Python >=3.8; 8.6.2 Requires-Python >=3.8; 8.7.0 Requires-Python >=3.8; 8.8.0 Requires-Python >=3.8; 8.9.0 Requires-Python >=3.8

ERROR: Could not find a version that satisfies the requirement torchaudio==0.7.0 (from versions: 0.8.0, 0.8.1, 0.9.0, 0.9.1, 0.10.0, 0.10.1, 0.10.2, 0.11.0, 0.12.0, 0.12.1, 0.13.0, 0.13.1)

ERROR: No matching distribution found for torchaudio==0.7.0

(sandianqi) C:\Users\czh\Downloads>pip install torchaudio==0

Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

ERROR: Could not find a version that satisfies the requirement torchaudio==0 (from versions: 0.8.0, 0.8.1, 0.9.0, 0.9.1, 0.10.0, 0.10.1, 0.10.2, 0.11.0, 0.12.0, 0.12.1, 0.13.0, 0.13.1)

ERROR: No matching distribution found for torchaudio==0

(sandianqi) C:\Users\czh\Downloads>pip install torchaudio==0.8.0

Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

Collecting torchaudio==0.8.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/94/07/c95c24c24673487aa8d9136cfe3550e264bc2d8d75b400ff0ee7c1bc02d6/torchaudio-0.8.0-cp37-none-win\_amd64.whl (109 kB)

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Collecting torch==1.8.0 (from torchaudio==0.8.0)

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/bc/7e/bb31de04449a9f28be83cf944f71fcd2fcd598416ef3674d38b6e1cb679b/torch-1.8.0-cp37-cp37m-win\_amd64.whl (190.5 MB)

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Requirement already satisfied: typing-extensions in d:\py\anaconda3\envs\sandianqi\lib\site-packages (from torch==1.8.0->torchaudio==0.8.0) (4.7.1)

Requirement already satisfied: numpy in d:\py\anaconda3\envs\sandianqi\lib\site-packages (from torch==1.8.0->torchaudio==0.8.0) (1.20.0)

Installing collected packages: torch, torchaudio

Attempting uninstall: torch

Found existing installation: torch 1.7.0+cu110

Uninstalling torch-1.7.0+cu110:

Successfully uninstalled torch-1.7.0+cu110

Successfully installed torch-1.8.0 torchaudio-0.8.0

(sandianqi) C:\Users\czh\Downloads>pip install backcall==0.2.0 certifi==2020.12.5 chardet==3.0.4 cycler==0.10.0 decorator==4.4.2 dgl-cu110==0.5.3 et-xmlfile==1.0.1 graphviz==0.8.4 idna==2.10 ipykernel==5.3.4 ipython==7.19.0 ipython-genutils==0.2.0 iterative-stratification==0.1.6 jdcal==1.4.1 jedi==0.17.2 joblib jupyter-client==6.1.7 jupyter-core==4.7.0 kiwisolver==1.3.1 llvmlite==0.35.0 matplotlib==3.3.3 mkl-fft==1.2.0 mkl-random==1.2.0 mkl-service==2.3.0 networkx==2.5 numba==0.52.0 olefile openpyxl==3.0.6 pandas==1.2.0 parso==0.7.1 pexpect==4.8.0 pickleshare==0.7.5 Pillow prompt-toolkit==3.0.8 ptyprocess==0.6.0 Pygments==2.7.3 pyparsing==2.4.7 python-dateutil==2.8.1 pytorchtools==0.0.2 pytz==2020.5 pyzmq==20.0.0 requests==2.25.0 scikit-learn scipy==1.5.4 seaborn==0.11.1 six threadpoolctl torchsummary==1.5.1 torchvision==0.8.1 tornado==6.1 tqdm==4.54.1 traitlets==5.0.5 typing-extensions urllib3==1.26.2 wcwidth==0.2.5 xlrd==1.2.0 Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

Collecting backcall==0.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/4c/1c/ff6546b6c12603d8dd1070aa3c3d273ad4c07f5771689a7b69a550e8c951/backcall-0.2.0-py2.py3-none-any.whl (11 kB)

Collecting certifi==2020.12.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/5e/a0/5f06e1e1d463903cf0c0eebeb751791119ed7a4b3737fdc9a77f1cdfb51f/certifi-2020.12.5-py2.py3-none-any.whl (147 kB)

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Collecting chardet==3.0.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/bc/a9/01ffebfb562e4274b6487b4bb1ddec7ca55ec7510b22e4c51f14098443b8/chardet-3.0.4-py2.py3-none-any.whl (133 kB)

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Collecting cycler==0.10.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f7/d2/e07d3ebb2bd7af696440ce7e754c59dd546ffe1bbe732c8ab68b9c834e61/cycler-0.10.0-py2.py3-none-any.whl (6.5 kB)

Collecting decorator==4.4.2

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/ed/1b/72a1821152d07cf1d8b6fce298aeb06a7eb90f4d6d41acec9861e7cc6df0/decorator-4.4.2-py2.py3-none-any.whl (9.2 kB)

Collecting dgl-cu110==0.5.3

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/74/0c/2c1186c1050b6512cc101427fd8e7c1232435ac45bed1fcd8091c0872ce2/dgl\_cu110-0.5.3-cp37-cp37m-win\_amd64.whl (25.6 MB)

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Collecting et-xmlfile==1.0.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/22/28/a99c42aea746e18382ad9fb36f64c1c1f04216f41797f2f0fa567da11388/et\_xmlfile-1.0.1.tar.gz (8.4 kB)

Preparing metadata (setup.py) ... done

Collecting graphviz==0.8.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/53/39/4ab213673844e0c004bed8a0781a0721a3f6bb23eb8854ee75c236428892/graphviz-0.8.4-py2.py3-none-any.whl (16 kB)

Collecting idna==2.10

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/a2/38/928ddce2273eaa564f6f50de919327bf3a00f091b5baba8dfa9460f3a8a8/idna-2.10-py2.py3-none-any.whl (58 kB)

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Collecting ipykernel==5.3.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/52/19/c2812690d8b340987eecd2cbc18549b1d130b94c5d97fcbe49f5f8710edf/ipykernel-5.3.4-py3-none-any.whl (120 kB)

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Collecting ipython==7.19.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/e0/c7/1c91a71b413c82cd4c49fb8b6676f6135650cd2cca2745a96bd84a56166c/ipython-7.19.0-py3-none-any.whl (784 kB)

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Collecting ipython-genutils==0.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/fa/bc/9bd3b5c2b4774d5f33b2d544f1460be9df7df2fe42f352135381c347c69a/ipython\_genutils-0.2.0-py2.py3-none-any.whl (26 kB)

Collecting iterative-stratification==0.1.6

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9d/79/9ba64c8c07b07b8b45d80725b2ebd7b7884701c1da34f70d4749f7b45f9a/iterative\_stratification-0.1.6-py3-none-any.whl (8.7 kB)

Collecting jdcal==1.4.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f0/da/572cbc0bc582390480bbd7c4e93d14dc46079778ed915b505dc494b37c57/jdcal-1.4.1-py2.py3-none-any.whl (9.5 kB)

Collecting jedi==0.17.2

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/c3/d4/36136b18daae06ad798966735f6c3fb96869c1be9f8245d2a8f556e40c36/jedi-0.17.2-py2.py3-none-any.whl (1.4 MB)

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Collecting joblib

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/10/40/d551139c85db202f1f384ba8bcf96aca2f329440a844f924c8a0040b6d02/joblib-1.3.2-py3-none-any.whl (302 kB)

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Collecting jupyter-client==6.1.7

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/dc/41/9fa443d5ae8907dd8f7d12146cb0092dc053afd67b5b57e7e8786a328547/jupyter\_client-6.1.7-py3-none-any.whl (108 kB)

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Collecting jupyter-core==4.7.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f4/34/ba811d7e4b5374e70fc3801d932966979e252e5c1a99eddb32ce63ec54e6/jupyter\_core-4.7.0-py3-none-any.whl (82 kB)

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Collecting kiwisolver==1.3.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/b2/55/6681ac2cc8de9bb612b1a777606e5beef240bf63aaa6cb03f44af5f42a77/kiwisolver-1.3.1-cp37-cp37m-win\_amd64.whl (51 kB)

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Collecting llvmlite==0.35.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/54/46/1abf8a9cefed0647283d4e9500976512fa925b5302d397c1f018528e6f1b/llvmlite-0.35.0-cp37-cp37m-win\_amd64.whl (16.0 MB)

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Collecting matplotlib==3.3.3

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/24/02/202982cbc4ab7a5a87c7f8d16e51d464016af742d5fb2d2b6b23116caec5/matplotlib-3.3.3-cp37-cp37m-win\_amd64.whl (8.5 MB)

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Collecting mkl-fft==1.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d2/80/8f6aeafe4b1d97ecf824f5b5b6986b401242444f5be4a490918ca2ebc162/mkl\_fft-1.2.0-10-cp37-cp37m-win\_amd64.whl (224 kB)

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Collecting mkl-random==1.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/0f/f0/67d8e81c6f8fcd5ecc029262e48d3a6e32e537447110930ac93b7ef21c96/mkl\_random-1.2.0-10-cp37-cp37m-win\_amd64.whl (361 kB)

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Collecting mkl-service==2.3.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/27/6b/7b1329f7fcb8ee661560c1da1c42fdb64136f23de9b8d29d7703e05445b3/mkl\_service-2.3.0-10-cp37-cp37m-win\_amd64.whl (42 kB)

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Collecting networkx==2.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9b/cd/dc52755d30ba41c60243235460961fc28022e5b6731f16c268667625baea/networkx-2.5-py3-none-any.whl (1.6 MB)

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Collecting numba==0.52.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/e8/f8/87b899da6ff667de4e41a3b614edd8a0d20e179bf2c562dba6ff399483ad/numba-0.52.0-cp37-cp37m-win\_amd64.whl (2.3 MB)

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Collecting olefile

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/17/d3/b64c356a907242d719fc668b71befd73324e47ab46c8ebbbede252c154b2/olefile-0.47-py2.py3-none-any.whl (114 kB)

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Collecting openpyxl==3.0.6

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d4/c5/1a5f82b3020bfb27f21b302f96c8ae6a34475070015d1b1e0b197a97e2af/openpyxl-3.0.6-py2.py3-none-any.whl (242 kB)

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Collecting pandas==1.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/11/57/ae7d1ce265e057b2b44e25f9dec0b1d38e7a0e5458fc8d502ab9abf50e75/pandas-1.2.0-cp37-cp37m-win\_amd64.whl (9.1 MB)

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Collecting parso==0.7.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/93/d1/e635bdde32890db5aeb2ffbde17e74f68986305a4466b0aa373b861e3f00/parso-0.7.1-py2.py3-none-any.whl (109 kB)

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Collecting pexpect==4.8.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/39/7b/88dbb785881c28a102619d46423cb853b46dbccc70d3ac362d99773a78ce/pexpect-4.8.0-py2.py3-none-any.whl (59 kB)

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Collecting pickleshare==0.7.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9a/41/220f49aaea88bc6fa6cba8d05ecf24676326156c23b991e80b3f2fc24c77/pickleshare-0.7.5-py2.py3-none-any.whl (6.9 kB)

Collecting Pillow

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/cb/3c/4f3ef1a14e903d7b2bc43672c20f732b874e1e50a9a58ac9a1726ef3773d/Pillow-9.5.0-cp37-cp37m-win\_amd64.whl (2.5 MB)

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Collecting prompt-toolkit==3.0.8

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/8a/aa/198e6a857e83ea8b711a6ae0c37717c0eb1b23ff52e3732a644fcd389cb3/prompt\_toolkit-3.0.8-py3-none-any.whl (355 kB)

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Collecting ptyprocess==0.6.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d1/29/605c2cc68a9992d18dada28206eeada56ea4bd07a239669da41674648b6f/ptyprocess-0.6.0-py2.py3-none-any.whl (39 kB)

Collecting Pygments==2.7.3

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/85/c5/c437c383d5917fae9782eb6588bec8aff931afe13c76b9e8c03dacee9beb/Pygments-2.7.3-py3-none-any.whl (950 kB)

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Collecting pyparsing==2.4.7

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/8a/bb/488841f56197b13700afd5658fc279a2025a39e22449b7cf29864669b15d/pyparsing-2.4.7-py2.py3-none-any.whl (67 kB)

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Collecting python-dateutil==2.8.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d4/70/d60450c3dd48ef87586924207ae8907090de0b306af2bce5d134d78615cb/python\_dateutil-2.8.1-py2.py3-none-any.whl (227 kB)

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Collecting pytorchtools==0.0.2

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/07/7d/91fc993eed451ff2aff02e09a8e0246125b72cbc7068cb94242ca2c0e72f/pytorchtools-0.0.2-py2.py3-none-any.whl (3.1 kB)

Collecting pytz==2020.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/89/06/2c2d3034b4d6bf22f2a4ae546d16925898658a33b4400cfb7e2c1e2871a3/pytz-2020.5-py2.py3-none-any.whl (510 kB)

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Collecting pyzmq==20.0.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/69/4f/99153a0a89e3c6d2cb81f23e457680d173b7b434946ede602efc4bad30a2/pyzmq-20.0.0-cp37-cp37m-win\_amd64.whl (1.0 MB)

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Collecting requests==2.25.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/39/fc/f91eac5a39a65f75a7adb58eac7fa78871ea9872283fb9c44e6545998134/requests-2.25.0-py2.py3-none-any.whl (61 kB)

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Collecting scikit-learn

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9d/20/0ffe8665a44bce7616bd33d4368a198fecad3b226bcafa38c63ef0f6286f/scikit\_learn-1.0.2-cp37-cp37m-win\_amd64.whl (7.1 MB)

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Collecting scipy==1.5.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/0e/d2/1a6ec41bca8722b56aa779313391ee46595085d0ceefa49b5acd308c7a38/scipy-1.5.4-cp37-cp37m-win\_amd64.whl (31.2 MB)

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Collecting seaborn==0.11.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/68/ad/6c2406ae175f59ec616714e408979b674fe27b9587f79d59a528ddfbcd5b/seaborn-0.11.1-py3-none-any.whl (285 kB)

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Collecting six

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d9/5a/e7c31adbe875f2abbb91bd84cf2dc52d792b5a01506781dbcf25c91daf11/six-1.16.0-py2.py3-none-any.whl (11 kB)

Collecting threadpoolctl

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/61/cf/6e354304bcb9c6413c4e02a747b600061c21d38ba51e7e544ac7bc66aecc/threadpoolctl-3.1.0-py3-none-any.whl (14 kB)

Collecting torchsummary==1.5.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/7d/18/1474d06f721b86e6a9b9d7392ad68bed711a02f3b61ac43f13c719db50a6/torchsummary-1.5.1-py3-none-any.whl (2.8 kB)

ERROR: Ignored the following yanked versions: 0.1.6, 0.1.7, 0.1.8, 0.1.9, 0.2.0, 0.2.1, 0.2.2, 0.2.2.post2, 0.2.2.post3, 0.11.0

ERROR: Ignored the following versions that require a different python version: 0.12.0 Requires-Python >=3.8; 0.12.0rc1 Requires-Python >=3.8; 0.12.1 Requires-Python >=3.8; 0.13.0 Requires-Python >=3.8; 0.13.0rc0 Requires-Python >=3.8; 0.13.1 Requires-Python >=3.8; 0.13.2 Requires-Python >=3.8; 0.20.2 Requires-Python >=3.8; 0.20.3 Requires-Python >=3.8; 0.40.0 Requires-Python >=3.8; 0.40.0rc1 Requires-Python >=3.8; 0.40.1 Requires-Python >=3.8; 0.40.1rc1 Requires-Python >=3.8; 0.41.0 Requires-Python >=3.8; 0.41.0rc1 Requires-Python >=3.8; 0.41.1 Requires-Python >=3.8; 0.42.0 Requires-Python >=3.9; 0.42.0rc1 Requires-Python >=3.9; 0.43.0 Requires-Python >=3.9; 0.43.0rc1 Requires-Python >=3.9; 0.57.0 Requires-Python >=3.8; 0.57.0rc1 Requires-Python >=3.8; 0.57.1 Requires-Python >=3.8; 0.57.1rc1 Requires-Python >=3.8; 0.58.0 Requires-Python >=3.8; 0.58.0rc1 Requires-Python >=3.8; 0.58.0rc2 Requires-Python >=3.8; 0.58.1 Requires-Python >=3.8; 0.59.0 Requires-Python >=3.9; 0.59.0rc1 Requires-Python >=3.9; 0.59.1 Requires-Python >=3.9; 0.60.0 Requires-Python >=3.9; 0.60.0rc1 Requires-Python >=3.9; 1.1.0 Requires-Python >=3.8; 1.1.1 Requires-Python >=3.8; 1.1.2 Requires-Python >=3.8; 1.1.3 Requires-Python >=3.8; 1.10.0 Requires-Python <3.12,>=3.8; 1.10.0rc1 Requires-Python <3.12,>=3.8; 1.10.0rc2 Requires-Python <3.12,>=3.8; 1.10.1 Requires-Python <3.12,>=3.8; 1.11.0 Requires-Python <3.13,>=3.9; 1.11.0rc1 Requires-Python <3.13,>=3.9; 1.11.0rc2 Requires-Python <3.13,>=3.9; 1.11.1 Requires-Python <3.13,>=3.9; 1.11.2 Requires-Python <3.13,>=3.9; 1.11.3 Requires-Python <3.13,>=3.9; 1.11.4 Requires-Python >=3.9; 1.12.0 Requires-Python >=3.9; 1.12.0rc1 Requires-Python >=3.9; 1.12.0rc2 Requires-Python >=3.9; 1.13.0 Requires-Python >=3.9; 1.13.0rc1 Requires-Python >=3.9; 1.13.1 Requires-Python >=3.9; 1.14.0rc1 Requires-Python >=3.10; 1.14.0rc2 Requires-Python >=3.10; 1.2.0 Requires-Python >=3.8; 1.2.0rc1 Requires-Python >=3.8; 1.2.1 Requires-Python >=3.8; 1.2.2 Requires-Python >=3.8; 1.3.0 Requires-Python >=3.8; 1.3.0rc1 Requires-Python >=3.8; 1.3.1 Requires-Python >=3.8; 1.3.2 Requires-Python >=3.8; 1.4.0 Requires-Python >=3.8; 1.4.0 Requires-Python >=3.9; 1.4.0rc0 Requires-Python >=3.8; 1.4.0rc1 Requires-Python >=3.9; 1.4.1 Requires-Python >=3.8; 1.4.1.post1 Requires-Python >=3.9; 1.4.2 Requires-Python >=3.8; 1.4.2 Requires-Python >=3.9; 1.4.3 Requires-Python >=3.8; 1.4.4 Requires-Python >=3.8; 1.5.0 Requires-Python >=3.8; 1.5.0 Requires-Python >=3.9; 1.5.0rc0 Requires-Python >=3.8; 1.5.0rc1 Requires-Python >=3.9; 1.5.1 Requires-Python >=3.8; 1.5.2 Requires-Python >=3.8; 1.5.3 Requires-Python >=3.8; 1.8.0 Requires-Python >=3.8,<3.11; 1.8.0rc1 Requires-Python >=3.8,<3.11; 1.8.0rc2 Requires-Python >=3.8,<3.11; 1.8.0rc3 Requires-Python >=3.8,<3.11; 1.8.0rc4 Requires-Python >=3.8,<3.11; 1.8.1 Requires-Python >=3.8,<3.11; 1.9.0 Requires-Python >=3.8,<3.12; 1.9.0rc1 Requires-Python >=3.8,<3.12; 1.9.0rc2 Requires-Python >=3.8,<3.12; 1.9.0rc3 Requires-Python >=3.8,<3.12; 1.9.1 Requires-Python >=3.8,<3.12; 1.9.2 Requires-Python >=3.8; 1.9.3 Requires-Python >=3.8; 10.0.0 Requires-Python >=3.8; 10.0.1 Requires-Python >=3.8; 10.1.0 Requires-Python >=3.8; 10.2.0 Requires-Python >=3.8; 10.3.0 Requires-Python >=3.8; 2.0.0 Requires-Python >=3.8; 2.0.0rc0 Requires-Python >=3.8; 2.0.0rc1 Requires-Python >=3.8; 2.0.1 Requires-Python >=3.8; 2.0.2 Requires-Python >=3.8; 2.0.3 Requires-Python >=3.8; 2.1.0 Requires-Python >=3.9; 2.1.0rc0 Requires-Python >=3.9; 2.1.1 Requires-Python >=3.9; 2.1.2 Requires-Python >=3.9; 2.1.3 Requires-Python >=3.9; 2.1.4 Requires-Python >=3.9; 2.18.0 Requires-Python >=3.8; 2.2.0 Requires-Python >=3.9; 2.2.0rc0 Requires-Python >=3.9; 2.2.1 Requires-Python >=3.9; 2.2.2 Requires-Python >=3.9; 2.32.0 Requires-Python >=3.8; 2.32.1 Requires-Python >=3.8; 2.32.2 Requires-Python >=3.8; 2.32.3 Requires-Python >=3.8; 2.7 Requires-Python >=3.8; 2.7.1 Requires-Python >=3.8; 2.7rc1 Requires-Python >=3.8; 2.8 Requires-Python >=3.8; 2.8.1 Requires-Python >=3.8; 2.8.1rc1 Requires-Python >=3.8; 2.8.2 Requires-Python >=3.8; 2.8.3 Requires-Python >=3.8; 2.8.4 Requires-Python >=3.8; 2.8.5 Requires-Python >=3.8; 2.8.6 Requires-Python >=3.8; 2.8.7 Requires-Python >=3.8; 2.8.8 Requires-Python >=3.8; 2.8rc1 Requires-Python >=3.8; 3.0 Requires-Python >=3.8; 3.0b1 Requires-Python >=3.8; 3.0rc1 Requires-Python >=3.8; 3.1 Requires-Python >=3.8; 3.1.4 Requires-Python >=3.8; 3.1rc0 Requires-Python >=3.8; 3.2 Requires-Python >=3.9; 3.2.0 Requires-Python >=3.8; 3.2.1 Requires-Python >=3.9; 3.2rc0 Requires-Python >=3.9; 3.3 Requires-Python >=3.10; 3.3.0 Requires-Python >=3.8; 3.3rc0 Requires-Python >=3.10; 3.4.0 Requires-Python >=3.8; 3.5.0 Requires-Python >=3.8; 3.6.0 Requires-Python >=3.8; 3.6.0rc1 Requires-Python >=3.8; 3.6.0rc2 Requires-Python >=3.8; 3.6.1 Requires-Python >=3.8; 3.6.2 Requires-Python >=3.8; 3.6.3 Requires-Python >=3.8; 3.7.0 Requires-Python >=3.8; 3.7.0rc1 Requires-Python >=3.8; 3.7.1 Requires-Python >=3.8; 3.7.2 Requires-Python >=3.8; 3.7.3 Requires-Python >=3.8; 3.7.4 Requires-Python >=3.8; 3.7.5 Requires-Python >=3.8; 3.8.0 Requires-Python >=3.9; 3.8.0rc1 Requires-Python >=3.9; 3.8.1 Requires-Python >=3.9; 3.8.2 Requires-Python >=3.9; 3.8.3 Requires-Python >=3.9; 3.8.4 Requires-Python >=3.9; 3.9.0 Requires-Python >=3.9; 3.9.0rc2 Requires-Python >=3.9; 5.0.0 Requires-Python >=3.8; 5.1.0 Requires-Python >=3.8; 5.1.1 Requires-Python >=3.8; 5.1.2 Requires-Python >=3.8; 5.1.3 Requires-Python >=3.8; 5.1.4 Requires-Python >=3.8; 5.1.5 Requires-Python >=3.8; 5.2.0 Requires-Python >=3.8; 5.3.0 Requires-Python >=3.8; 5.3.1 Requires-Python >=3.8; 5.3.2 Requires-Python >=3.8; 5.4.0 Requires-Python >=3.8; 5.5.0 Requires-Python >=3.8; 5.5.1 Requires-Python >=3.8; 5.6.0 Requires-Python >=3.8; 5.6.1 Requires-Python >=3.8; 5.7.0 Requires-Python >=3.8; 5.7.1 Requires-Python >=3.8; 5.7.2 Requires-Python >=3.8; 6.17.0 Requires-Python >=3.8; 6.17.1 Requires-Python >=3.8; 6.18.0 Requires-Python >=3.8; 6.18.1 Requires-Python >=3.8; 6.18.2 Requires-Python >=3.8; 6.18.3 Requires-Python >=3.8; 6.19.0 Requires-Python >=3.8; 6.19.1 Requires-Python >=3.8; 6.19.2 Requires-Python >=3.8; 6.19.3 Requires-Python >=3.8; 6.19.4 Requires-Python >=3.8; 6.20.0 Requires-Python >=3.8; 6.20.1 Requires-Python >=3.8; 6.20.2 Requires-Python >=3.8; 6.21.0 Requires-Python >=3.8; 6.21.1 Requires-Python >=3.8; 6.21.2 Requires-Python >=3.8; 6.21.3 Requires-Python >=3.8; 6.22.0 Requires-Python >=3.8; 6.23.0 Requires-Python >=3.8; 6.23.1 Requires-Python >=3.8; 6.23.2 Requires-Python >=3.8; 6.23.3 Requires-Python >=3.8; 6.24.0 Requires-Python >=3.8; 6.25.0 Requires-Python >=3.8; 6.25.1 Requires-Python >=3.8; 6.25.2 Requires-Python >=3.8; 6.26.0 Requires-Python >=3.8; 6.27.0 Requires-Python >=3.8; 6.27.1 Requires-Python >=3.8; 6.28.0 Requires-Python >=3.8; 6.29.0 Requires-Python >=3.8; 6.29.1 Requires-Python >=3.8; 6.29.2 Requires-Python >=3.8; 6.29.3 Requires-Python >=3.8; 6.29.4 Requires-Python >=3.8; 8.0.0 Requires-Python >=3.8; 8.0.0a1 Requires-Python >=3.8; 8.0.0a2 Requires-Python >=3.8; 8.0.0a3 Requires-Python >=3.8; 8.0.0a4 Requires-Python >=3.8; 8.0.0b0 Requires-Python >=3.8; 8.0.0b1 Requires-Python >=3.8; 8.0.0b2 Requires-Python >=3.8; 8.0.0b3 Requires-Python >=3.8; 8.0.0rc0 Requires-Python >=3.8; 8.0.0rc1 Requires-Python >=3.8; 8.0.1 Requires-Python >=3.8; 8.0.2 Requires-Python >=3.8; 8.0.3 Requires-Python >=3.8; 8.1.0 Requires-Python >=3.8; 8.1.1 Requires-Python >=3.8; 8.10.0 Requires-Python >=3.8; 8.11.0 Requires-Python >=3.8; 8.12.0 Requires-Python >=3.8; 8.12.1 Requires-Python >=3.8; 8.12.2 Requires-Python >=3.8; 8.12.3 Requires-Python >=3.8; 8.13.0 Requires-Python >=3.8; 8.13.1 Requires-Python >=3.9; 8.13.2 Requires-Python >=3.9; 8.14.0 Requires-Python >=3.9; 8.15.0 Requires-Python >=3.9; 8.16.0 Requires-Python >=3.9; 8.16.1 Requires-Python >=3.9; 8.17.0 Requires-Python >=3.9; 8.17.1 Requires-Python >=3.9; 8.17.2 Requires-Python >=3.9; 8.18.0 Requires-Python >=3.9; 8.18.1 Requires-Python >=3.9; 8.19.0 Requires-Python >=3.10; 8.2.0 Requires-Python >=3.8; 8.20.0 Requires-Python >=3.10; 8.21.0 Requires-Python >=3.10; 8.22.0 Requires-Python >=3.10; 8.22.1 Requires-Python >=3.10; 8.22.2 Requires-Python >=3.10; 8.23.0 Requires-Python >=3.10; 8.24.0 Requires-Python >=3.10; 8.25.0 Requires-Python >=3.10; 8.3.0 Requires-Python >=3.8; 8.3.1 Requires-Python >=3.8; 8.4.0 Requires-Python >=3.8; 8.5.0 Requires-Python >=3.8; 8.6.0 Requires-Python >=3.8; 8.6.1 Requires-Python >=3.8; 8.6.2 Requires-Python >=3.8; 8.7.0 Requires-Python >=3.8; 8.8.0 Requires-Python >=3.8; 8.9.0 Requires-Python >=3.8

ERROR: Could not find a version that satisfies the requirement torchvision==0.8.1 (from versions: 0.3.0, 0.4.1, 0.5.0, 0.9.0, 0.9.1, 0.10.0, 0.10.1, 0.11.1, 0.11.2, 0.11.3, 0.12.0, 0.13.0, 0.13.1, 0.14.0, 0.14.1)

ERROR: No matching distribution found for torchvision==0.8.1

(sandianqi) C:\Users\czh\Downloads>pip install torchvision==0

Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

ERROR: Ignored the following yanked versions: 0.1.6, 0.1.7, 0.1.8, 0.1.9, 0.2.0, 0.2.1, 0.2.2, 0.2.2.post2, 0.2.2.post3, 0.11.0

ERROR: Could not find a version that satisfies the requirement torchvision==0 (from versions: 0.3.0, 0.4.1, 0.5.0, 0.9.0, 0.9.1, 0.10.0, 0.10.1, 0.11.1, 0.11.2, 0.11.3, 0.12.0, 0.13.0, 0.13.1, 0.14.0, 0.14.1)

ERROR: No matching distribution found for torchvision==0

(sandianqi) C:\Users\czh\Downloads>pip install torchvision==0.9.0

Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

Collecting torchvision==0.9.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/e0/93/88cbc7e7528b06b393dbcf98ab29390be3801794dfc77881664f1bb0ec80/torchvision-0.9.0-cp37-cp37m-win\_amd64.whl (852 kB)

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Requirement already satisfied: numpy in d:\py\anaconda3\envs\sandianqi\lib\site-packages (from torchvision==0.9.0) (1.20.0)

Requirement already satisfied: torch==1.8.0 in d:\py\anaconda3\envs\sandianqi\lib\site-packages (from torchvision==0.9.0) (1.8.0)

Collecting pillow>=4.1.1 (from torchvision==0.9.0)

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/cb/3c/4f3ef1a14e903d7b2bc43672c20f732b874e1e50a9a58ac9a1726ef3773d/Pillow-9.5.0-cp37-cp37m-win\_amd64.whl (2.5 MB)

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Requirement already satisfied: typing-extensions in d:\py\anaconda3\envs\sandianqi\lib\site-packages (from torch==1.8.0->torchvision==0.9.0) (4.7.1)

Installing collected packages: pillow, torchvision

Successfully installed pillow-9.5.0 torchvision-0.9.0

(sandianqi) C:\Users\czh\Downloads>pip install backcall==0.2.0 certifi==2020.12.5 chardet==3.0.4 cycler==0.10.0 decorator==4.4.2 dgl-cu110==0.5.3 et-xmlfile==1.0.1 graphviz==0.8.4 idna==2.10 ipykernel==5.3.4 ipython==7.19.0 ipython-genutils==0.2.0 iterative-stratification==0.1.6 jdcal==1.4.1 jedi==0.17.2 joblib jupyter-client==6.1.7 jupyter-core==4.7.0 kiwisolver==1.3.1 llvmlite==0.35.0 matplotlib==3.3.3 mkl-fft==1.2.0 mkl-random==1.2.0 mkl-service==2.3.0 networkx==2.5 numba==0.52.0 olefile openpyxl==3.0.6 pandas==1.2.0 parso==0.7.1 pexpect==4.8.0 pickleshare==0.7.5 Pillow prompt-toolkit==3.0.8 ptyprocess==0.6.0 Pygments==2.7.3 pyparsing==2.4.7 python-dateutil==2.8.1 pytorchtools==0.0.2 pytz==2020.5 pyzmq==20.0.0 requests==2.25.0 scikit-learn scipy==1.5.4 seaborn==0.11.1 six threadpoolctl torchsummary==1.5.1 tornado==6.1 tqdm==4

.54.1 traitlets==5.0.5 typing-extensions urllib3==1.26.2 wcwidth==0.2.5 xlrd==1.2.0

Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

Collecting backcall==0.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/4c/1c/ff6546b6c12603d8dd1070aa3c3d273ad4c07f5771689a7b69a550e8c951/backcall-0.2.0-py2.py3-none-any.whl (11 kB)

Collecting certifi==2020.12.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/5e/a0/5f06e1e1d463903cf0c0eebeb751791119ed7a4b3737fdc9a77f1cdfb51f/certifi-2020.12.5-py2.py3-none-any.whl (147 kB)

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Collecting chardet==3.0.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/bc/a9/01ffebfb562e4274b6487b4bb1ddec7ca55ec7510b22e4c51f14098443b8/chardet-3.0.4-py2.py3-none-any.whl (133 kB)

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Collecting cycler==0.10.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f7/d2/e07d3ebb2bd7af696440ce7e754c59dd546ffe1bbe732c8ab68b9c834e61/cycler-0.10.0-py2.py3-none-any.whl (6.5 kB)

Collecting decorator==4.4.2

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/ed/1b/72a1821152d07cf1d8b6fce298aeb06a7eb90f4d6d41acec9861e7cc6df0/decorator-4.4.2-py2.py3-none-any.whl (9.2 kB)

Collecting dgl-cu110==0.5.3

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/74/0c/2c1186c1050b6512cc101427fd8e7c1232435ac45bed1fcd8091c0872ce2/dgl\_cu110-0.5.3-cp37-cp37m-win\_amd64.whl (25.6 MB)

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Collecting et-xmlfile==1.0.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/22/28/a99c42aea746e18382ad9fb36f64c1c1f04216f41797f2f0fa567da11388/et\_xmlfile-1.0.1.tar.gz (8.4 kB)

Preparing metadata (setup.py) ... done

Collecting graphviz==0.8.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/53/39/4ab213673844e0c004bed8a0781a0721a3f6bb23eb8854ee75c236428892/graphviz-0.8.4-py2.py3-none-any.whl (16 kB)

Collecting idna==2.10

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/a2/38/928ddce2273eaa564f6f50de919327bf3a00f091b5baba8dfa9460f3a8a8/idna-2.10-py2.py3-none-any.whl (58 kB)

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Collecting ipykernel==5.3.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/52/19/c2812690d8b340987eecd2cbc18549b1d130b94c5d97fcbe49f5f8710edf/ipykernel-5.3.4-py3-none-any.whl (120 kB)

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Collecting ipython==7.19.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/e0/c7/1c91a71b413c82cd4c49fb8b6676f6135650cd2cca2745a96bd84a56166c/ipython-7.19.0-py3-none-any.whl (784 kB)

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Collecting ipython-genutils==0.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/fa/bc/9bd3b5c2b4774d5f33b2d544f1460be9df7df2fe42f352135381c347c69a/ipython\_genutils-0.2.0-py2.py3-none-any.whl (26 kB)

Collecting iterative-stratification==0.1.6

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9d/79/9ba64c8c07b07b8b45d80725b2ebd7b7884701c1da34f70d4749f7b45f9a/iterative\_stratification-0.1.6-py3-none-any.whl (8.7 kB)

Collecting jdcal==1.4.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f0/da/572cbc0bc582390480bbd7c4e93d14dc46079778ed915b505dc494b37c57/jdcal-1.4.1-py2.py3-none-any.whl (9.5 kB)

Collecting jedi==0.17.2

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/c3/d4/36136b18daae06ad798966735f6c3fb96869c1be9f8245d2a8f556e40c36/jedi-0.17.2-py2.py3-none-any.whl (1.4 MB)

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Collecting joblib

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/10/40/d551139c85db202f1f384ba8bcf96aca2f329440a844f924c8a0040b6d02/joblib-1.3.2-py3-none-any.whl (302 kB)

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Collecting jupyter-client==6.1.7

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/dc/41/9fa443d5ae8907dd8f7d12146cb0092dc053afd67b5b57e7e8786a328547/jupyter\_client-6.1.7-py3-none-any.whl (108 kB)

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Collecting jupyter-core==4.7.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f4/34/ba811d7e4b5374e70fc3801d932966979e252e5c1a99eddb32ce63ec54e6/jupyter\_core-4.7.0-py3-none-any.whl (82 kB)

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Collecting kiwisolver==1.3.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/b2/55/6681ac2cc8de9bb612b1a777606e5beef240bf63aaa6cb03f44af5f42a77/kiwisolver-1.3.1-cp37-cp37m-win\_amd64.whl (51 kB)

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Collecting llvmlite==0.35.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/54/46/1abf8a9cefed0647283d4e9500976512fa925b5302d397c1f018528e6f1b/llvmlite-0.35.0-cp37-cp37m-win\_amd64.whl (16.0 MB)

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Collecting matplotlib==3.3.3

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/24/02/202982cbc4ab7a5a87c7f8d16e51d464016af742d5fb2d2b6b23116caec5/matplotlib-3.3.3-cp37-cp37m-win\_amd64.whl (8.5 MB)

━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 8.5/8.5 MB 11.1 MB/s eta 0:00:00

Collecting mkl-fft==1.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d2/80/8f6aeafe4b1d97ecf824f5b5b6986b401242444f5be4a490918ca2ebc162/mkl\_fft-1.2.0-10-cp37-cp37m-win\_amd64.whl (224 kB)

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Collecting mkl-random==1.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/0f/f0/67d8e81c6f8fcd5ecc029262e48d3a6e32e537447110930ac93b7ef21c96/mkl\_random-1.2.0-10-cp37-cp37m-win\_amd64.whl (361 kB)

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Collecting mkl-service==2.3.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/27/6b/7b1329f7fcb8ee661560c1da1c42fdb64136f23de9b8d29d7703e05445b3/mkl\_service-2.3.0-10-cp37-cp37m-win\_amd64.whl (42 kB)

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Collecting networkx==2.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9b/cd/dc52755d30ba41c60243235460961fc28022e5b6731f16c268667625baea/networkx-2.5-py3-none-any.whl (1.6 MB)

━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 1.6/1.6 MB 12.8 MB/s eta 0:00:00

Collecting numba==0.52.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/e8/f8/87b899da6ff667de4e41a3b614edd8a0d20e179bf2c562dba6ff399483ad/numba-0.52.0-cp37-cp37m-win\_amd64.whl (2.3 MB)

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Collecting olefile

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/17/d3/b64c356a907242d719fc668b71befd73324e47ab46c8ebbbede252c154b2/olefile-0.47-py2.py3-none-any.whl (114 kB)

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Collecting openpyxl==3.0.6

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d4/c5/1a5f82b3020bfb27f21b302f96c8ae6a34475070015d1b1e0b197a97e2af/openpyxl-3.0.6-py2.py3-none-any.whl (242 kB)

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Collecting pandas==1.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/11/57/ae7d1ce265e057b2b44e25f9dec0b1d38e7a0e5458fc8d502ab9abf50e75/pandas-1.2.0-cp37-cp37m-win\_amd64.whl (9.1 MB)

━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 9.1/9.1 MB 10.6 MB/s eta 0:00:00

Collecting parso==0.7.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/93/d1/e635bdde32890db5aeb2ffbde17e74f68986305a4466b0aa373b861e3f00/parso-0.7.1-py2.py3-none-any.whl (109 kB)

━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 109.5/109.5 kB 6.2 MB/s eta 0:00:00

Collecting pexpect==4.8.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/39/7b/88dbb785881c28a102619d46423cb853b46dbccc70d3ac362d99773a78ce/pexpect-4.8.0-py2.py3-none-any.whl (59 kB)

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Collecting pickleshare==0.7.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9a/41/220f49aaea88bc6fa6cba8d05ecf24676326156c23b991e80b3f2fc24c77/pickleshare-0.7.5-py2.py3-none-any.whl (6.9 kB)

Requirement already satisfied: Pillow in d:\py\anaconda3\envs\sandianqi\lib\site-packages (9.5.0)

Collecting prompt-toolkit==3.0.8

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/8a/aa/198e6a857e83ea8b711a6ae0c37717c0eb1b23ff52e3732a644fcd389cb3/prompt\_toolkit-3.0.8-py3-none-any.whl (355 kB)

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Collecting ptyprocess==0.6.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d1/29/605c2cc68a9992d18dada28206eeada56ea4bd07a239669da41674648b6f/ptyprocess-0.6.0-py2.py3-none-any.whl (39 kB)

Collecting Pygments==2.7.3

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/85/c5/c437c383d5917fae9782eb6588bec8aff931afe13c76b9e8c03dacee9beb/Pygments-2.7.3-py3-none-any.whl (950 kB)

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Collecting pyparsing==2.4.7

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/8a/bb/488841f56197b13700afd5658fc279a2025a39e22449b7cf29864669b15d/pyparsing-2.4.7-py2.py3-none-any.whl (67 kB)

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Collecting python-dateutil==2.8.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d4/70/d60450c3dd48ef87586924207ae8907090de0b306af2bce5d134d78615cb/python\_dateutil-2.8.1-py2.py3-none-any.whl (227 kB)

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Collecting pytorchtools==0.0.2

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/07/7d/91fc993eed451ff2aff02e09a8e0246125b72cbc7068cb94242ca2c0e72f/pytorchtools-0.0.2-py2.py3-none-any.whl (3.1 kB)

Collecting pytz==2020.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/89/06/2c2d3034b4d6bf22f2a4ae546d16925898658a33b4400cfb7e2c1e2871a3/pytz-2020.5-py2.py3-none-any.whl (510 kB)

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Collecting pyzmq==20.0.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/69/4f/99153a0a89e3c6d2cb81f23e457680d173b7b434946ede602efc4bad30a2/pyzmq-20.0.0-cp37-cp37m-win\_amd64.whl (1.0 MB)

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Collecting requests==2.25.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/39/fc/f91eac5a39a65f75a7adb58eac7fa78871ea9872283fb9c44e6545998134/requests-2.25.0-py2.py3-none-any.whl (61 kB)

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Collecting scikit-learn

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9d/20/0ffe8665a44bce7616bd33d4368a198fecad3b226bcafa38c63ef0f6286f/scikit\_learn-1.0.2-cp37-cp37m-win\_amd64.whl (7.1 MB)

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Collecting scipy==1.5.4

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/0e/d2/1a6ec41bca8722b56aa779313391ee46595085d0ceefa49b5acd308c7a38/scipy-1.5.4-cp37-cp37m-win\_amd64.whl (31.2 MB)

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Collecting seaborn==0.11.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/68/ad/6c2406ae175f59ec616714e408979b674fe27b9587f79d59a528ddfbcd5b/seaborn-0.11.1-py3-none-any.whl (285 kB)

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Collecting six

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d9/5a/e7c31adbe875f2abbb91bd84cf2dc52d792b5a01506781dbcf25c91daf11/six-1.16.0-py2.py3-none-any.whl (11 kB)

Collecting threadpoolctl

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/61/cf/6e354304bcb9c6413c4e02a747b600061c21d38ba51e7e544ac7bc66aecc/threadpoolctl-3.1.0-py3-none-any.whl (14 kB)

Collecting torchsummary==1.5.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/7d/18/1474d06f721b86e6a9b9d7392ad68bed711a02f3b61ac43f13c719db50a6/torchsummary-1.5.1-py3-none-any.whl (2.8 kB)

Collecting tornado==6.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/c7/c2/ff4628a08df5ce2662109957275718888d7ab6787591fa0decfd327bd2ce/tornado-6.1-cp37-cp37m-win\_amd64.whl (422 kB)

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Collecting tqdm==4.54.1

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/8a/54/115f0c28a61d56674c3a5e05c46d6c3523ad196e1dcd3e2d8b119026df36/tqdm-4.54.1-py2.py3-none-any.whl (69 kB)

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Collecting traitlets==5.0.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f6/7d/3ecb0ebd0ce8dcdfa7bd47ab85c1d4a521e6770ef283d0824f5804994dfe/traitlets-5.0.5-py3-none-any.whl (100 kB)

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Requirement already satisfied: typing-extensions in d:\py\anaconda3\envs\sandianqi\lib\site-packages (4.7.1)

Collecting urllib3==1.26.2

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f5/71/45d36a8df68f3ebb098d6861b2c017f3d094538c0fb98fa61d4dc43e69b9/urllib3-1.26.2-py2.py3-none-any.whl (136 kB)

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Collecting wcwidth==0.2.5

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/59/7c/e39aca596badaf1b78e8f547c807b04dae603a433d3e7a7e04d67f2ef3e5/wcwidth-0.2.5-py2.py3-none-any.whl (30 kB)

Collecting xlrd==1.2.0

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/b0/16/63576a1a001752e34bf8ea62e367997530dc553b689356b9879339cf45a4/xlrd-1.2.0-py2.py3-none-any.whl (103 kB)

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Requirement already satisfied: numpy>=1.14.0 in d:\py\anaconda3\envs\sandianqi\lib\site-packages (from dgl-cu110==0.5.3) (1.20.0)

Requirement already satisfied: setuptools>=18.5 in d:\py\anaconda3\envs\sandianqi\lib\site-packages (from ipython==7.19.0) (65.6.3)

Collecting colorama (from ipython==7.19.0)

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d1/d6/3965ed04c63042e047cb6a3e6ed1a63a35087b6a609aa3a15ed8ac56c221/colorama-0.4.6-py2.py3-none-any.whl (25 kB)

Collecting pywin32>=1.0 (from jupyter-core==4.7.0)

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/80/e6/08192cb5728a6ffdb70ea990d9a1351b320d31a751bb463e652d9e05e7aa/pywin32-306-cp37-cp37m-win\_amd64.whl (9.3 MB)

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Collecting numpy>=1.14.0 (from dgl-cu110==0.5.3)

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/ff/18/60ac053857fb924b0324c81200b59c00317ebaa3c14b7478266b50ffed19/numpy-1.19.5-cp37-cp37m-win\_amd64.whl (13.2 MB)

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Collecting mkl (from mkl-fft==1.2.0)

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/20/8f/86c48504f937ec2155e423804ec14abe854cae7bc36238f58370eb780447/mkl-2024.2.0-py2.py3-none-win\_amd64.whl (161.5 MB)

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Collecting dpcpp\_cpp\_rt (from mkl-fft==1.2.0)

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/9c/0a/8235b57621db77e162c60cf8438b24cfa5c72b0f42f300404a5b495a0c86/dpcpp\_cpp\_rt-2024.2.0-py2.py3-none-win\_amd64.whl (62 kB)

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Collecting intel-openmp==2024.2.0 (from dpcpp\_cpp\_rt->mkl-fft==1.2.0)

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/d5/5c/d52aa9aa7a71df1216bd5960f2d0b6277cd2884ed848e5b40f8db1471a3c/intel\_openmp-2024.2.0-py2.py3-none-win\_amd64.whl (3.6 MB)

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Collecting intel-opencl-rt==2024.2.0 (from dpcpp\_cpp\_rt->mkl-fft==1.2.0)

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/19/87/19c7f02911b7d2fe2de71512c967e4d076f998cf3d53507694e45290747f/intel\_opencl\_rt-2024.2.0-py2.py3-none-win\_amd64.whl (105.1 MB)

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Collecting intel-sycl-rt==2024.2.0 (from dpcpp\_cpp\_rt->mkl-fft==1.2.0)

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f5/88/da41edf9aa32ae6c7e5a16c87cc43bdbe4f14b5629d81e46771da36559ec/intel\_sycl\_rt-2024.2.0-py2.py3-none-win\_amd64.whl (7.6 MB)

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Collecting tbb==2021.\* (from intel-opencl-rt==2024.2.0->dpcpp\_cpp\_rt->mkl-fft==1.2.0)

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f1/24/500811330b3b070e5995c3275181dbcd00c06cef26c6ebfe6ee1ca9b6223/tbb-2021.13.0-py3-none-win\_amd64.whl (286 kB)

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Collecting intel-cmplr-lic-rt==2024.2.0 (from intel-opencl-rt==2024.2.0->dpcpp\_cpp\_rt->mkl-fft==1.2.0)

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/81/06/143e388f58aa26dabc40bf168600203a42172e105080ad02f1eb4afe342e/intel\_cmplr\_lic\_rt-2024.2.0-py2.py3-none-win\_amd64.whl (47 kB)

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Collecting intel-cmplr-lib-ur==2024.2.0 (from intel-openmp==2024.2.0->dpcpp\_cpp\_rt->mkl-fft==1.2.0)

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/4a/c4/de93e4d89235d1c42db89e193164f8caa7a80fe22f4d83f8dff3f5a6a427/intel\_cmplr\_lib\_ur-2024.2.0-py2.py3-none-win\_amd64.whl (1.3 MB)

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Collecting intel-cmplr-lib-rt==2024.2.0 (from intel-sycl-rt==2024.2.0->dpcpp\_cpp\_rt->mkl-fft==1.2.0)

Downloading https://pypi.tuna.tsinghua.edu.cn/packages/f1/5b/bbf56c9e2dfd8f9ae14650b429f58c04824e07b8b83e83f2ce2884c6eb08/intel\_cmplr\_lib\_rt-2024.2.0-py2.py3-none-win\_amd64.whl (17.1 MB)

━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 17.1/17.1 MB 11.7 MB/s eta 0:00:00

Building wheels for collected packages: et-xmlfile

Building wheel for et-xmlfile (setup.py) ... done

Created wheel for et-xmlfile: filename=et\_xmlfile-1.0.1-py3-none-any.whl size=8903 sha256=547de3c4ccb06e31f981e806b6bd03e894cf2e143402024ef2183333a4b548c0

Stored in directory: C:\Users\czh\AppData\Local\Temp\pip-ephem-wheel-cache-vvydcqlb\wheels\d2\f0\fd\de5146d51c28509397e8089f309a7d9af6d96daf0ab8c49f11

Successfully built et-xmlfile

Installing collected packages: wcwidth, torchsummary, tbb, pywin32, pytz, pytorchtools, ptyprocess, pickleshare, jdcal, ipython-genutils, intel-cmplr-lic-rt, intel-cmplr-lib-ur, intel-cmplr-lib-rt, et-xmlfile, chardet, certifi, backcall, xlrd, urllib3, traitlets, tqdm, tornado, threadpoolctl, six, pyzmq, pyparsing, Pygments, prompt-toolkit, pexpect, parso, openpyxl, olefile, numpy, llvmlite, kiwisolver, joblib, intel-sycl-rt, intel-openmp, intel-opencl-rt, idna, graphviz, decorator, colorama, scipy, requests, python-dateutil, numba, networkx, mkl, jupyter-core, jedi, dpcpp\_cpp\_rt, cycler, scikit-learn, pandas, mkl-service, mkl-random, mkl-fft, matplotlib, jupyter-client, ipython, dgl-cu110, seaborn, iterative-stratification, ipykernel

Attempting uninstall: numpy

Found existing installation: numpy 1.20.0

Uninstalling numpy-1.20.0:

Successfully uninstalled numpy-1.20.0

Successfully installed Pygments-2.7.3 backcall-0.2.0 certifi-2020.12.5 chardet-3.0.4 colorama-0.4.6 cycler-0.10.0 decorator-4.4.2 dgl-cu110-0.5.3 dpcpp\_cpp\_rt-2024.2.0 et-xmlfile-1.0.1 graphviz-0.8.4 idna-2.10 intel-cmplr-lib-rt-2024.2.0 intel-cmplr-lib-ur-2024.2.0 intel-cmplr-lic-rt-2024.2.0 intel-opencl-rt-2024.2.0 intel-openmp-2024.2.0 intel-sycl-rt-2024.2.0 ipykernel-5.3.4 ipython-7.19.0 ipython-genutils-0.2.0 iterative-stratification-0.1.6 jdcal-1.4.1 jedi-0.17.2 joblib-1.3.2 jupyter-client-6.1.7 jupyter-core-4.7.0 kiwisolver-1.3.1 llvmlite-0.35.0 matplotlib-3.3.3 mkl-2024.2.0 mkl-fft-1.2.0 mkl-random-1.2.0 mkl-service-2.3.0 networkx-2.5 numba-0.52.0 numpy-1.19.5 olefile-0.47 openpyxl-3.0.6 pandas-1.2.0 parso-0.7.1 pexpect-4.8.0 pickleshare-0.7.5 prompt-toolkit-3.0.8 ptyprocess-0.6.0 pyparsing-2.4.7 python-dateutil-2.8.1 pytorchtools-0.0.2 pytz-2020.5 pywin32-306 pyzmq-20.0.0 requests-2.25.0 scikit-learn-1.0.2 scipy-1.5.4 seaborn-0.11.1 six-1.16.0 tbb-2021.13.0 threadpoolctl-3.1.0 torchsummary-1.5.1 tornado-6.1 tqdm-4.54.1 traitlets-5.0.5 urllib3-1.26.2 wcwidth-0.2.5 xlrd-1.2.0

(sandianqi) C:\Users\czh\Downloads>cd D:\TransPHLA-AOMP-master

(sandianqi) C:\Users\czh\Downloads>D:

(sandianqi) D:\TransPHLA-AOMP-master>cd D:\TransPHLA-AOMP-master

(sandianqi) D:\TransPHLA-AOMP-master>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_heatmap True --output\_mutation True

python: can't open file 'pHLAIformer.py': [Errno 2] No such file or directory

(sandianqi) D:\TransPHLA-AOMP-master>cd TransPHLA-AOMP

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_heatmap True --output\_mutation True

File "pHLAIformer.py", line 100

log.logger.critical('Please ensure the same number of HLAs and peptides.')

^

IndentationError: unindent does not match any outer indentation level

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_heatmap True --output\_mutation True

File "pHLAIformer.py", line 100

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^

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(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_heatmap True --output\_mutation True

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IndentationError: unindent does not match any outer indentation level

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Namespace(HLA\_file='hlas.fasta', cut\_length=10, cut\_peptide=True, output\_attention=True, output\_dir="'./results/'", output\_heatmap=True, output\_mutation=True, peptide\_file='peptides.fasta', threshold=0.5)

# Samples = 18

Traceback (most recent call last):

File "pHLAIformer.py", line 194, in <module>

pHLA\_attns\_draw\_save(predict\_data, attns, hla, pep, attn\_savepath, fig\_savepath)

File "D:\TransPHLA-AOMP-master\TransPHLA-AOMP\attention.py", line 674, in pHLA\_attns\_draw\_save

temp\_pd.to\_csv(attn\_savepath + '{}\_{}\_attention.csv'.format(hla, peptide))

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\core\generic.py", line 3400, in to\_csv

storage\_options=storage\_options,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\formats\format.py", line 1083, in to\_csv

csv\_formatter.save()

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\formats\csvs.py", line 234, in save

storage\_options=self.storage\_options,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\common.py", line 644, in get\_handle

newline="",

OSError: [Errno 22] Invalid argument: "'./results/'/attention/HLA-A\*11:01\_AEAFIQSA\_attention.csv"

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_

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# Samples = 18

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Namespace(HLA\_file='hlas.fasta', cut\_length=10, cut\_peptide=True, output\_attention=True, output\_dir='D:/TransPHLA-AOMP-master/TransPHLA-AOMP/results/', output\_heatmap=True, output\_mutation=True, peptide\_file='peptides.fasta', threshold=0.5)

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OSError: [Errno 22] Invalid argument: 'D:/TransPHLA-AOMP-master/TransPHLA-AOMP/results//attention/HLA-A\*11:01\_AEAFIQSA\_attention.csv'

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir "D:/TransPHLA-AOMP-master/TransPHLA-AOMP/resul

ts" --output\_attention True --output\_heatmap True --output\_mutation True

Namespace(HLA\_file='hlas.fasta', cut\_length=10, cut\_peptide=True, output\_attention=True, output\_dir='D:/TransPHLA-AOMP-master/TransPHLA-AOMP/results', output\_heatmap=True, output\_mutation=True, peptide\_file='peptides.fasta', threshold=0.5)

# Samples = 18

Traceback (most recent call last):

File "pHLAIformer.py", line 194, in <module>

pHLA\_attns\_draw\_save(predict\_data, attns, hla, pep, attn\_savepath, fig\_savepath)

File "D:\TransPHLA-AOMP-master\TransPHLA-AOMP\attention.py", line 674, in pHLA\_attns\_draw\_save

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newline="",

OSError: [Errno 22] Invalid argument: 'D:/TransPHLA-AOMP-master/TransPHLA-AOMP/results/attention/HLA-A\*11:01\_AEAFIQSA\_attention.csv'

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir "./results/" --output\_attention True --output\_heatmap True --output\_mutation True

Namespace(HLA\_file='hlas.fasta', cut\_length=10, cut\_peptide=True, output\_attention=True, output\_dir='./results/', output\_heatmap=True, output\_mutation=True, peptide\_file='peptides.fasta', threshold=0.5)

# Samples = 18

Traceback (most recent call last):

File "pHLAIformer.py", line 194, in <module>

pHLA\_attns\_draw\_save(predict\_data, attns, hla, pep, attn\_savepath, fig\_savepath)

File "D:\TransPHLA-AOMP-master\TransPHLA-AOMP\attention.py", line 674, in pHLA\_attns\_draw\_save

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File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\core\generic.py", line 3400, in to\_csv

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File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\formats\format.py", line 1083, in to\_csv

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storage\_options=self.storage\_options,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\common.py", line 644, in get\_handle

newline="",

OSError: [Errno 22] Invalid argument: './results//attention/HLA-A\*11:01\_AEAFIQSA\_attention.csv'

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_heatmap True --output\_mutation True

Namespace(HLA\_file='hlas.fasta', cut\_length=10, cut\_peptide=True, output\_attention=True, output\_dir="'./results/'", output\_heatmap=True, output\_mutation=True, peptide\_file='peptides.fasta', threshold=0.5)

# Samples = 18

Traceback (most recent call last):

File "pHLAIformer.py", line 194, in <module>

pHLA\_attns\_draw\_save(predict\_data, attns, hla, pep, attn\_savepath, fig\_savepath)

File "D:\TransPHLA-AOMP-master\TransPHLA-AOMP\attention.py", line 674, in pHLA\_attns\_draw\_save

temp\_pd.to\_csv(attn\_savepath + '{}\_{}\_attention.csv'.format(hla, peptide))

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\core\generic.py", line 3400, in to\_csv

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File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\common.py", line 644, in get\_handle

newline="",

OSError: [Errno 22] Invalid argument: "'./results/'/attention/HLA-A\*11:01\_AEAFIQSA\_attention.csv"

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_

heatmap True --output\_mutation True

Namespace(HLA\_file='hlas.fasta', cut\_length=10, cut\_peptide=True, output\_attention=True, output\_dir="'./results/'", output\_heatmap=True, output\_mutation=True, peptide\_file='peptides.fasta', threshold=0.5)

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File "pHLAIformer.py", line 194, in <module>

pHLA\_attns\_draw\_save(predict\_data, attns, hla, pep, attn\_savepath, fig\_savepath)

File "D:\TransPHLA-AOMP-master\TransPHLA-AOMP\attention.py", line 674, in pHLA\_attns\_draw\_save

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File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\core\generic.py", line 3400, in to\_csv

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storage\_options=self.storage\_options,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\common.py", line 644, in get\_handle

newline="",

OSError: [Errno 22] Invalid argument: "'./results/'/attention/HLA-A\*11:01\_AEAFIQSA\_attention.csv"

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_heatmap True --output\_mutation True

Namespace(HLA\_file='hlas.fasta', cut\_length=10, cut\_peptide=True, output\_attention=True, output\_dir="'./results/'", output\_heatmap=True, output\_mutation=True, peptide\_file='peptides.fasta', threshold=0.5)

# Samples = 18

Traceback (most recent call last):

File "pHLAIformer.py", line 194, in <module>

pHLA\_attns\_draw\_save(predict\_data, attns, hla, pep, attn\_savepath, fig\_savepath)

File "D:\TransPHLA-AOMP-master\TransPHLA-AOMP\attention.py", line 690, in pHLA\_attns\_draw\_save

dpi = 600, pil\_kwargs = {'compression': 'tiff\_lzw'}, bbox\_inches = 'tight', facecolor=fig.get\_facecolor())

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\pyplot.py", line 859, in savefig

res = fig.savefig(\*args, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\figure.py", line 2311, in savefig

self.canvas.print\_figure(fname, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\backend\_bases.py", line 2217, in print\_figure

\*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\backend\_bases.py", line 1639, in wrapper

return func(\*args, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\cbook\deprecation.py", line 411, in wrapper

return func(\*inner\_args, \*\*inner\_kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\backends\backend\_agg.py", line 607, in print\_tif

.save(filename\_or\_obj, format='tiff', \*\*pil\_kwargs))

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\PIL\Image.py", line 2429, in save

fp = builtins.open(filename, "w+b")

OSError: [Errno 22] Invalid argument: "'./results/'/figures/HLA-A\*11:01\_AEAFIQSA\_Negative\_Prob0.0001.tif"

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_heatmap True --output\_mutation True

Namespace(HLA\_file='hlas.fasta', cut\_length=10, cut\_peptide=True, output\_attention=True, output\_dir="'./results/'", output\_heatmap=True, output\_mutation=True, peptide\_file='peptides.fasta', threshold=0.5)

# Samples = 18

Traceback (most recent call last):

File "pHLAIformer.py", line 194, in <module>

pHLA\_attns\_draw\_save(predict\_data, attns, hla, pep, attn\_savepath, fig\_savepath)

File "D:\TransPHLA-AOMP-master\TransPHLA-AOMP\attention.py", line 690, in pHLA\_attns\_draw\_save

dpi = 600, pil\_kwargs = {'compression': 'tiff\_lzw'}, bbox\_inches = 'tight', facecolor=fig.get\_facecolor())

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\pyplot.py", line 859, in savefig

res = fig.savefig(\*args, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\figure.py", line 2311, in savefig

self.canvas.print\_figure(fname, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\backend\_bases.py", line 2217, in print\_figure

\*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\backend\_bases.py", line 1639, in wrapper

return func(\*args, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\cbook\deprecation.py", line 411, in wrapper

return func(\*inner\_args, \*\*inner\_kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\backends\backend\_agg.py", line 607, in print\_tif

.save(filename\_or\_obj, format='tiff', \*\*pil\_kwargs))

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\PIL\Image.py", line 2429, in save

fp = builtins.open(filename, "w+b")

OSError: [Errno 22] Invalid argument: "'./results/'/figures/HLA-A\*11:01\_AEAFIQSA\_Negative\_Prob0.0001.tif"

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_heatmap True --output\_mutation True

Namespace(HLA\_file='hlas.fasta', cut\_length=10, cut\_peptide=True, output\_attention=True, output\_dir="'./results/'", output\_heatmap=True, output\_mutation=True, peptide\_file='peptides.fasta', threshold=0.5)

# Samples = 18

Traceback (most recent call last):

File "pHLAIformer.py", line 194, in <module>

pHLA\_attns\_draw\_save(predict\_data, attns, hla, pep, attn\_savepath, fig\_savepath)

File "D:\TransPHLA-AOMP-master\TransPHLA-AOMP\attention.py", line 718, in pHLA\_attns\_draw\_save

temp\_pd.to\_csv(attn\_savepath + '{}\_{}\_attention.csv'.format(hla, peptide))

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\core\generic.py", line 3400, in to\_csv

storage\_options=storage\_options,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\formats\format.py", line 1083, in to\_csv

csv\_formatter.save()

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\formats\csvs.py", line 234, in save

storage\_options=self.storage\_options,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\common.py", line 644, in get\_handle

newline="",

OSError: [Errno 22] Invalid argument: "'./results/'/attention/HLA-A\*11:01\_AEAFIQSA\_attention.csv"

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_heatmap True --output\_mutation True

Namespace(HLA\_file='hlas.fasta', cut\_length=10, cut\_peptide=True, output\_attention=True, output\_dir="'./results/'", output\_heatmap=True, output\_mutation=True, peptide\_file='peptides.fasta', threshold=0.5)

# Samples = 18

Traceback (most recent call last):

File "pHLAIformer.py", line 194, in <module>

pHLA\_attns\_draw\_save(predict\_data, attns, hla, pep, attn\_savepath, fig\_savepath)

File "D:\TransPHLA-AOMP-master\TransPHLA-AOMP\attention.py", line 674, in pHLA\_attns\_draw\_save

temp\_pd.to\_csv(attn\_savepath + '{}\_{}\_attention.csv'.format(hla, peptide))

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\core\generic.py", line 3400, in to\_csv

storage\_options=storage\_options,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\formats\format.py", line 1083, in to\_csv

csv\_formatter.save()

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\formats\csvs.py", line 234, in save

storage\_options=self.storage\_options,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\common.py", line 644, in get\_handle

newline="",

OSError: [Errno 22] Invalid argument: "'./results/'/attention/HLA-A\*11:01\_AEAFIQSA\_attention.csv"

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_heatmap True --output\_mutation True

Namespace(HLA\_file='hlas.fasta', cut\_length=10, cut\_peptide=True, output\_attention=True, output\_dir="'./results/'", output\_heatmap=True, output\_mutation=True, peptide\_file='peptides.fasta', threshold=0.5)

# Samples = 18

Traceback (most recent call last):

File "pHLAIformer.py", line 194, in <module>

pHLA\_attns\_draw\_save(predict\_data, attns, hla, pep, attn\_savepath, fig\_savepath)

File "D:\TransPHLA-AOMP-master\TransPHLA-AOMP\attention.py", line 674, in pHLA\_attns\_draw\_save

temp\_pd.to\_csv('./{}\_{}\_attention.csv'.format(hla, peptide))

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\core\generic.py", line 3400, in to\_csv

storage\_options=storage\_options,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\formats\format.py", line 1083, in to\_csv

csv\_formatter.save()

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\formats\csvs.py", line 234, in save

storage\_options=self.storage\_options,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\common.py", line 644, in get\_handle

newline="",

OSError: [Errno 22] Invalid argument: './HLA-A\*11:01\_AEAFIQSA\_attention.csv'

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_heatmap True --output\_mutation True

Namespace(HLA\_file='hlas.fasta', cut\_length=10, cut\_peptide=True, output\_attention=True, output\_dir="'./results/'", output\_heatmap=True, output\_mutation=True, peptide\_file='peptides.fasta', threshold=0.5)

# Samples = 18

Traceback (most recent call last):

File "pHLAIformer.py", line 194, in <module>

pHLA\_attns\_draw\_save(predict\_data, attns, hla, pep, attn\_savepath, fig\_savepath)

File "D:\TransPHLA-AOMP-master\TransPHLA-AOMP\attention.py", line 690, in pHLA\_attns\_draw\_save

dpi = 600, pil\_kwargs = {'compression': 'tiff\_lzw'}, bbox\_inches = 'tight', facecolor=fig.get\_facecolor())

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\pyplot.py", line 859, in savefig

res = fig.savefig(\*args, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\figure.py", line 2311, in savefig

self.canvas.print\_figure(fname, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\backend\_bases.py", line 2217, in print\_figure

\*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\backend\_bases.py", line 1639, in wrapper

return func(\*args, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\cbook\deprecation.py", line 411, in wrapper

return func(\*inner\_args, \*\*inner\_kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\backends\backend\_agg.py", line 607, in print\_tif

.save(filename\_or\_obj, format='tiff', \*\*pil\_kwargs))

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\PIL\Image.py", line 2429, in save

fp = builtins.open(filename, "w+b")

OSError: [Errno 22] Invalid argument: "'./results/'/figures/HLA-A\*11:01\_AEAFIQSA\_Negative\_Prob0.0001.tif"

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_heatmap True --output\_mutation True

Namespace(HLA\_file='hlas.fasta', cut\_length=10, cut\_peptide=True, output\_attention=True, output\_dir="'./results/'", output\_heatmap=True, output\_mutation=True, peptide\_file='peptides.fasta', threshold=0.5)

# Samples = 18

Traceback (most recent call last):

File "pHLAIformer.py", line 194, in <module>

pHLA\_attns\_draw\_save(predict\_data, attns, hla, pep, attn\_savepath, fig\_savepath)

File "D:\TransPHLA-AOMP-master\TransPHLA-AOMP\attention.py", line 677, in pHLA\_attns\_draw\_save

temp\_pd.to\_csv(file\_path)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\core\generic.py", line 3400, in to\_csv

storage\_options=storage\_options,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\formats\format.py", line 1083, in to\_csv

csv\_formatter.save()

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\formats\csvs.py", line 234, in save

storage\_options=self.storage\_options,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\common.py", line 644, in get\_handle

newline="",

OSError: [Errno 22] Invalid argument: "'./results/'/attention/HLA-A\*11:01\_AEAFIQSA\_attention.csv"

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_heatmap True --output\_mutation True

Namespace(HLA\_file='hlas.fasta', cut\_length=10, cut\_peptide=True, output\_attention=True, output\_dir="'./results/'", output\_heatmap=True, output\_mutation=True, peptide\_file='peptides.fasta', threshold=0.5)

# Samples = 18

Traceback (most recent call last):

File "pHLAIformer.py", line 194, in <module>

pHLA\_attns\_draw\_save(predict\_data, attns, hla, pep, attn\_savepath, fig\_savepath)

File "D:\TransPHLA-AOMP-master\TransPHLA-AOMP\attention.py", line 702, in pHLA\_attns\_draw\_save

dpi = 600, pil\_kwargs = {'compression': 'tiff\_lzw'}, bbox\_inches = 'tight', facecolor=fig.get\_facecolor())

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\pyplot.py", line 859, in savefig

res = fig.savefig(\*args, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\figure.py", line 2311, in savefig

self.canvas.print\_figure(fname, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\backend\_bases.py", line 2217, in print\_figure

\*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\backend\_bases.py", line 1639, in wrapper

return func(\*args, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\cbook\deprecation.py", line 411, in wrapper

return func(\*inner\_args, \*\*inner\_kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\backends\backend\_agg.py", line 607, in print\_tif

.save(filename\_or\_obj, format='tiff', \*\*pil\_kwargs))

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\PIL\Image.py", line 2429, in save

fp = builtins.open(filename, "w+b")

OSError: [Errno 22] Invalid argument: "'./results/'/figures/HLA-A\*11:01\_AEAFIQSA\_Negative\_Prob0.0001.tif"

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_heatmap True --output\_mutation True

Namespace(HLA\_file='hlas.fasta', cut\_length=10, cut\_peptide=True, output\_attention=True, output\_dir="'./results/'", output\_heatmap=True, output\_mutation=True, peptide\_file='peptides.fasta', threshold=0.5)

# Samples = 18

Traceback (most recent call last):

File "pHLAIformer.py", line 194, in <module>

pHLA\_attns\_draw\_save(predict\_data, attns, hla, pep, attn\_savepath, fig\_savepath)

File "D:\TransPHLA-AOMP-master\TransPHLA-AOMP\attention.py", line 702, in pHLA\_attns\_draw\_save

dpi = 600, pil\_kwargs = {'compression': 'tiff\_lzw'}, bbox\_inches = 'tight', facecolor=fig.get\_facecolor())

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\pyplot.py", line 859, in savefig

res = fig.savefig(\*args, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\figure.py", line 2311, in savefig

self.canvas.print\_figure(fname, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\backend\_bases.py", line 2217, in print\_figure

\*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\backend\_bases.py", line 1639, in wrapper

return func(\*args, \*\*kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\cbook\deprecation.py", line 411, in wrapper

return func(\*inner\_args, \*\*inner\_kwargs)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\matplotlib\backends\backend\_agg.py", line 607, in print\_tif

.save(filename\_or\_obj, format='tiff', \*\*pil\_kwargs))

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\PIL\Image.py", line 2429, in save

fp = builtins.open(filename, "w+b")

OSError: [Errno 22] Invalid argument: "'./results/'/figures/HLA-A\*11:01\_AEAFIQSA\_Negative\_Prob0.0001.tif"

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_heatmap True --output\_mutation True

Namespace(HLA\_file='hlas.fasta', cut\_length=10, cut\_peptide=True, output\_attention=True, output\_dir="'./results/'", output\_heatmap=True, output\_mutation=True, peptide\_file='peptides.fasta', threshold=0.5)

# Samples = 18

No HLA-A\*11:01 with 8, Use the overall attention for pepAAtype-peppsition

# Samples = 345

Traceback (most recent call last):

File "pHLAIformer.py", line 222, in <module>

mut\_data.to\_csv(mut\_savepath + '{}\_{}\_mutation.csv'.format(hla, peptide), index = False)

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\core\generic.py", line 3400, in to\_csv

storage\_options=storage\_options,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\formats\format.py", line 1083, in to\_csv

csv\_formatter.save()

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\formats\csvs.py", line 234, in save

storage\_options=self.storage\_options,

File "D:\py\Anaconda3\envs\sandianqi\lib\site-packages\pandas\io\common.py", line 644, in get\_handle

newline="",

OSError: [Errno 22] Invalid argument: "'./results/'/mutation/HLA-A\*11:01\_AEAFIQSA\_mutation.csv"

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_heatmap True --output\_mutation True

Namespace(HLA\_file='hlas.fasta', cut\_length=10, cut\_peptide=True, output\_attention=True, output\_dir="'./results/'", output\_heatmap=True, output\_mutation=True, peptide\_file='peptides.fasta', threshold=0.5)

# Samples = 18

No HLA-A\*11:01 with 8, Use the overall attention for pepAAtype-peppsition

# Samples = 345

\*\*\*\*\*\*\*\*\*\* HLA-A\*11:01 | AEAFIQSA → # Mutation peptides = 344

If you want to use IEDB tools to predict IC50, please use these format:

AEAFIQSA AEAFIQSV DEAFIQSA AAAFIQSA LEAFIQSA APAFIQSA FEAFIQSA AEAFIQSF AEAFIQSL LEKFIQSA AEAVIQSV FEAFIQSF AEAKIQSL AEAKIQSF DEAFIQSL AAAFIQSF FEAFIQSL AEALIQSL FEKFIQSA APAFIQSL FEDFIQSA APAFIQSF LPAFIQSA LAAFIQSA AEAVIQSL AEALIQSF DAAFIQSA FAAFIQSA DPAFIQSA AEAVIQSF DELFIQSA AAAFIQSL FEAFIQSV LEAFIQSL DEAFIQSF AAAFIQSV LEAFIQSF FELFIQSA FPAFIQSA LEAFIQSV LELFIQSA DEKFIQSA APAFIQSV LEDFIQSA DEAFIQSV AEAKIQSV DEDFIQSA AEALIQSV FEAKIQSV LPLFIQSA AEDLIQSF LEAVIQSL DPDFIQSA LEKFIQSL FEDFIQSF LAAFIQSV AAAKIQSF AAALIQSF LELFIQSL FAAFIQSF DPAFIQSF FPKFIQSA FPAFIQSL APALIQSF LEKFIQSV AEKLIQSF APAVIQSF FPLFIQSA DEAVIQSV LEDFIQSF FPAFIQSF APALIQSL DEDFIQSL AELVIQSF AEKLIQSV DAAFIQSF AAALIQSV AEKKIQSF LAKFIQSA AAAKIQSV FEAVIQSL AAAKIQSL AEDLIQSV AEDVIQSF APAKIQSL AEDVIQSL AEKKIQSV FADFIQSA DEDFIQSV FEKFIQSL LEAKIQSF DEKFIQSV DALFIQSA DEAVIQSL AELKIQSV DEALIQSF FALFIQSA AELLIQSV LEALIQSV FEALIQSL DEAKIQSV LEDFIQSV AEDKIQSL AEKVIQSF DELFIQSF DEDFIQSF FEAVIQSF APAKIQSV DPAFIQSV DELFIQSV LEAKIQSV AAAVIQSV LEKFIQSF AELLIQSF AAALIQSL LPDFIQSA LPAFIQSF DAKFIQSA LPAFIQSV LEALIQSL DADFIQSA APAVIQSL AELKIQSL LEALIQSF DEAKIQSF FEKFIQSF FEALIQSV DELFIQSL LEAVIQSV FEALIQSF DPLFIQSA FPAFIQSV FAAFIQSV LALFIQSA AAAVIQSF AEKVIQSL LELFIQSF AEDLIQSL LEDFIQSL FEAVIQSV DEALIQSL DEAKIQSL DPAFIQSL FEDFIQSV FPDFIQSA FAAFIQSL AEDVIQSV FAKFIQSA DPKFIQSA FELFIQSF AEKKIQSL FEKFIQSV LELFIQSV LAAFIQSL DEALIQSV LPKFIQSA FEAKIQSL FEAKIQSF FEDFIQSL DEAVIQSF APAVIQSV AELKIQSF AEKLIQSL LPAFIQSL AAAVIQSL AEKVIQSV DEKFIQSL LEAVIQSF FELFIQSV LADFIQSA FELFIQSL AELLIQSL APAKIQSF AEDKIQSV DEKFIQSF AEDKIQSF APALIQSV DAAFIQSV LAAFIQSF DAAFIQSL LEAKIQSL AELVIQSV AELVIQSL LPALIQSL AADKIQSV AALKIQSL AADVIQSV APLLIQSV DPAVIQSF LPALIQSV AADKIQSF AALVIQSV AADVIQSF APDKIQSF FPLFIQSF APLVIQSV LAAKIQSV FALFIQSL AADLIQSL AADLIQSF APDKIQSV AADLIQSV DPAKIQSF AALLIQSL DADFIQSF AALVIQSL FADFIQSL LPLFIQSV FAKFIQSF DAKFIQSL DPALIQSL APDVIQSV FPKFIQSV DPAVIQSV FPALIQSV APKKIQSF APDVIQSL FAAKIQSV DPDFIQSV FPDFIQSF APDLIQSF APDKIQSL LALFIQSV DPLFIQSF AALKIQSV FPKFIQSF APKLIQSF LAALIQSV FALFIQSV AALKIQSF FADFIQSF FPAKIQSV APKVIQSV FPDFIQSL DAKFIQSV LPAVIQSF AALLIQSF DALFIQSF AADVIQSL LPAKIQSF APKKIQSL DPAKIQSV DAAKIQSV AAKVIQSL DPDFIQSL LALFIQSL FPKFIQSL APKVIQSF DPKFIQSF DADFIQSL FAALIQSF FPALIQSL FAKFIQSV AAKVIQSV LAKFIQSV LADFIQSF DPALIQSF DPLFIQSL FAAVIQSL LPAKIQSV LPDFIQSL LPDFIQSV APKLIQSL FAALIQSV FALFIQSF LAAVIQSV DAAVIQSL LAAVIQSF APLLIQSL FPAVIQSL DAALIQSV AAKLIQSV LAKFIQSL FPAVIQSV AAKKIQSV APKLIQSV LPAVIQSV FPAKIQSF AAKVIQSF DAAVIQSV APLLIQSF LAKFIQSF DAAKIQSL FADFIQSV APLVIQSF DADFIQSV LPDFIQSF DPKFIQSV DPAKIQSL LPLFIQSL LPKFIQSV FPAKIQSL LPLFIQSF FAAKIQSF AADKIQSL APDVIQSF FAAVIQSF APKVIQSL LPAKIQSL FAALIQSL DAALIQSF DALFIQSL DALFIQSV LAALIQSF APLVIQSL AALVIQSF FPDFIQSV LAALIQSL LADFIQSV FPAVIQSF APDLIQSL APLKIQSV LALFIQSF APLKIQSL DPALIQSV DPKFIQSL FAKFIQSL AAKKIQSL AALLIQSV FAAKIQSL LPKFIQSF FPLFIQSV DAKFIQSF DAALIQSL FPLFIQSL FAAVIQSV AAKKIQSF AAKLIQSF APLKIQSF LPKFIQSL LPALIQSF DAAKIQSF LADFIQSL DPAVIQSL APKKIQSV DPDFIQSF LAAKIQSL LPAVIQSL LAAKIQSF AAKLIQSL DAAVIQSF DPLFIQSV FPALIQSF LAAVIQSL APDLIQSV

No HLA-A\*11:01 with 8, Use the overall attention for pepAAtype-peppsition

# Samples = 345

\*\*\*\*\*\*\*\*\*\* HLA-A\*11:01 | AEAFIQPI → # Mutation peptides = 344

If you want to use IEDB tools to predict IC50, please use these format:

AEAFIQPI LEAFIQPI AEAFIQPL APAFIQPI AEAFIQPV AAAFIQPI FEAFIQPI AEAFIQPF DEAFIQPI AAAFIQPV LELFIQPI LPAFIQPI FEAFIQPL AEAVIQPL LEDFIQPI APAFIQPL FELFIQPI FEDFIQPI APAFIQPV AEAVIQPF LEKFIQPI DPAFIQPI DAAFIQPI FPAFIQPI AEALIQPV DEDFIQPI DEKFIQPI AAAFIQPL APAFIQPF DEAFIQPL AEAKIQPF FEAFIQPF AEAVIQPV LEAFIQPV LEAFIQPL DELFIQPI FAAFIQPI DEAFIQPF AEALIQPL LEAFIQPF FEKFIQPI AEAKIQPV AEALIQPF FEAFIQPV AAAFIQPF DEAFIQPV LAAFIQPI AEAKIQPL AEDLIQPF LEDFIQPV DEDFIQPV APALIQPV AEDLIQPV DEAKIQPV LPKFIQPI AEKVIQPL AAAKIQPF FAKFIQPI DEKFIQPL AEKLIQPL AEKKIQPV FEAKIQPL FPDFIQPI DELFIQPF DADFIQPI FEALIQPV LELFIQPL DELFIQPL DEALIQPV DEAKIQPL DPAFIQPL AELVIQPV AAAVIQPV AELVIQPL LEAVIQPL APALIQPL AELVIQPF FELFIQPF FPAFIQPV DEKFIQPF DAKFIQPI AAALIQPL DPAFIQPV LALFIQPI FAAFIQPF AEKVIQPF DEDFIQPL FELFIQPL AELLIQPF DPDFIQPI APAVIQPF AEDKIQPL DAAFIQPL AEKVIQPV DPAFIQPF LEDFIQPF FEAKIQPV AEKLIQPF LEAKIQPF FEKFIQPF DEALIQPL FPAFIQPL AELLIQPV FEAVIQPV AEKKIQPL LAAFIQPF DEAKIQPF AAAVIQPF FPAFIQPF LEAKIQPL LPAFIQPL LELFIQPF LEALIQPL LEALIQPV AELKIQPL DELFIQPV DPLFIQPI APALIQPF FEAKIQPF LPAFIQPF AEDKIQPF LADFIQPI AAALIQPV LAAFIQPV DPKFIQPI APAKIQPV FAAFIQPL LEDFIQPL AEDVIQPF LAKFIQPI FAAFIQPV LEKFIQPF LELFIQPV AELLIQPL LEKFIQPL AELKIQPV DEAVIQPV LPDFIQPI DAAFIQPF DEAVIQPF AEDVIQPV LEAVIQPV FELFIQPV DEKFIQPV APAVIQPV AAAKIQPV AEDVIQPL FEKFIQPL LPAFIQPV FEDFIQPF FEDFIQPL AEKLIQPV FEALIQPF LEKFIQPV DEAVIQPL FEDFIQPV AEDKIQPV FADFIQPI DEALIQPF FEKFIQPV LEALIQPF AELKIQPF LPLFIQPI APAKIQPL AEDLIQPL APAVIQPL DALFIQPI FEAVIQPL AAALIQPF FEALIQPL FPKFIQPI AAAKIQPL FEAVIQPF AEKKIQPF FPLFIQPI LAAFIQPL LEAVIQPF DAAFIQPV AAAVIQPL APAKIQPF DEDFIQPF LEAKIQPV FALFIQPI AALKIQPV FPAVIQPV LPAKIQPF APKLIQPL APLVIQPL AAKLIQPV APKLIQPF AADKIQPF DPLFIQPV DAALIQPV LPDFIQPL APKVIQPV APDKIQPL FPDFIQPF LAAKIQPF DAAVIQPL FADFIQPF FAAVIQPL LAAKIQPV AADLIQPV LALFIQPL APDVIQPL DPALIQPF AAKKIQPF FPAVIQPF LPAVIQPL FPAKIQPF DPAKIQPL APDKIQPF FAKFIQPV FAALIQPL AALLIQPL AALVIQPF LPALIQPF FALFIQPF LPKFIQPF LAKFIQPF AALKIQPL AADKIQPV FAAKIQPF LADFIQPV LPLFIQPL DPDFIQPF AADKIQPL APKLIQPV APLLIQPL DPKFIQPL DADFIQPL DPAVIQPF AAKVIQPF DAALIQPL FPLFIQPF APKKIQPL APDLIQPL LPKFIQPL LPDFIQPV DAAKIQPV LAAVIQPL APKVIQPF FPAKIQPV LAKFIQPL AAKLIQPL LAAKIQPL DPAKIQPV APDVIQPF AAKKIQPV DPAVIQPL APKVIQPL DAKFIQPF APKKIQPF LPDFIQPF LPKFIQPV LPALIQPV DAALIQPF AALLIQPV DALFIQPF FPAVIQPL AALVIQPV DPALIQPV DAAKIQPF AADVIQPL LPLFIQPV APLVIQPF FPDFIQPL AAKVIQPL FPLFIQPL AADVIQPF FAKFIQPL FAAKIQPL LPALIQPL APLKIQPL LPAVIQPV DADFIQPV FPDFIQPV DPLFIQPL APLKIQPV AAKLIQPF FAALIQPF LADFIQPL APLVIQPV LALFIQPF APLLIQPV LAAVIQPV APDKIQPV FPALIQPL FAAVIQPF LPLFIQPF DPDFIQPL AALKIQPF DPLFIQPF FADFIQPL AADLIQPF DAKFIQPL FADFIQPV DAAKIQPL FAKFIQPF APDLIQPF DPKFIQPV FALFIQPV DPALIQPL FPKFIQPF LALFIQPV DALFIQPV APLLIQPF DPDFIQPV DADFIQPF FAALIQPV LAALIQPV DPKFIQPF FAAVIQPV FPKFIQPL DALFIQPL LAALIQPF LPAVIQPF LAKFIQPV FPKFIQPV LAAVIQPF FPAKIQPL APDLIQPV AADLIQPL DPAVIQPV LADFIQPF FPLFIQPV AALLIQPF APKKIQPV FPALIQPF APDVIQPV FALFIQPL DPAKIQPF AADVIQPV DAKFIQPV FAAKIQPV AALVIQPL DAAVIQPV LAALIQPL AAKKIQPL APLKIQPF LPAKIQPV AAKVIQPV DAAVIQPF LPAKIQPL FPALIQPV

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 361

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | KVYEGVWKKA → # Mutation peptides = 360

If you want to use IEDB tools to predict IC50, please use these format:

KVYEGVWKKA KVYEGVWKKL KVYEGVWKKY RVYEGVWKKA KRYEGVWKKA KVYEGVWKKF KLYEGVWKKA AVYEGVWKKA SVYEGVWKKA KEYEGVWKKA KLYEGVWKLA REYEGVWKKA KRYEGVWKKY KRYEGVWKKF KRYEGVWKKL KLYEGVWKSA KEYEGVWKKY KLYEGVWKKL RLYEGVWKKA KLYEGVWKKY KLYEGVWKTA ARYEGVWKKA SLYEGVWKKA SRYEGVWKKA ALYEGVWKKA AEYEGVWKKA KLYEGVWKKF KRYEGVWKLA KRYEGVWKSA KEYEGVWKTA KEYEGVWKLA SEYEGVWKKA KEYEGVWKSA RRYEGVWKKA KRYEGVWKTA KEYEGVWKKL KEYEGVWKKF KRFEGVWKKL RLYEGVWKSA SEYEGVWKKY KEFEGVWKKL ALYEGVWKSA SLYEGVWKKY REYEGVWKKF RRYEGVWKSA SRYEGVWKLA KRLEGVWKKY KLIEGVWKKL KLIEGVWKKY KRIEGVWKKF AEYEGVWKLA KEFEGVWKKY ARYEGVWKLA AEYEGVWKKF RRYEGVWKKF ARYEGVWKTA RLYEGVWKTA KLLEGVWKKY SRYEGVWKKY ALYEGVWKTA RRYEGVWKLA RRYEGVWKTA ALYEGVWKLA SLYEGVWKKF SLYEGVWKSA KRFEGVWKKY RLYEGVWKKL KEIEGVWKKY SRYEGVWKKF KLIEGVWKKF AEYEGVWKKY SRYEGVWKKL SEYEGVWKLA SRYEGVWKTA RRYEGVWKKY KRFEGVWKKF REYEGVWKKY SLYEGVWKKL KELEGVWKKL AEYEGVWKKL KEIEGVWKKF REYEGVWKLA KEIEGVWKKL KLFEGVWKKY KLLEGVWKKF SRYEGVWKSA REYEGVWKKL AEYEGVWKSA SLYEGVWKLA KRIEGVWKKY KLFEGVWKKL KELEGVWKKF KLFEGVWKKF ALYEGVWKKF ARYEGVWKKY RLYEGVWKLA SEYEGVWKKL REYEGVWKTA SEYEGVWKTA KRLEGVWKKF KLLEGVWKKL SLYEGVWKTA ARYEGVWKSA KEFEGVWKKF RLYEGVWKKY ALYEGVWKKY ARYEGVWKKF RRYEGVWKKL KELEGVWKKY KRIEGVWKKL AEYEGVWKTA REYEGVWKSA RLYEGVWKKF KRLEGVWKKL ALYEGVWKKL ARYEGVWKKL SEYEGVWKKF SEYEGVWKSA SEYEGVWVLA RLYEGVWLSA KLIEGVWLKL KRFEGVWLKY AELEGVWKKF SEYEGVWVSA KRLEGVWLKL ALIEGVWKKF SRYEGVWVTA KEIEGVWVKF KLLEGVWVKL SEYEGVWISA ARFEGVWKKF REYEGVWLSA SRLEGVWKKY RRLEGVWKKY KEFEGVWVKL SRYEGVWILA SEYEGVWILA SRIEGVWKKF SLYEGVWISA KEIEGVWLKL KELEGVWVKY KEIEGVWIKY KRFEGVWIKY SRYEGVWLLA KLIEGVWVKF RRYEGVWVSA RRYEGVWVLA KEFEGVWLKF REYEGVWISA ALLEGVWKKY KLIEGVWLKY RRYEGVWLLA KEFEGVWVKF RRLEGVWKKL KLLEGVWIKF SLYEGVWLTA SRYEGVWITA SRFEGVWKKY KLLEGVWLKL AEFEGVWKKL AELEGVWKKY RRYEGVWILA KRIEGVWVKY ALYEGVWVLA KRLEGVWVKL RRYEGVWLTA RRFEGVWKKL AEYEGVWLSA SEIEGVWKKY AEYEGVWISA RLYEGVWILA KLIEGVWIKL ARYEGVWVSA ARIEGVWKKY AEYEGVWLTA KRFEGVWIKF KRLEGVWLKF ALYEGVWLLA KELEGVWVKL KRLEGVWIKF KELEGVWLKF RRFEGVWKKF KEFEGVWIKL SRFEGVWKKL SLLEGVWKKY RLYEGVWLLA KLFEGVWIKY SEFEGVWKKY AEYEGVWVSA SEFEGVWKKF RLYEGVWVTA KLIEGVWIKY RRIEGVWKKL KELEGVWLKL SRIEGVWKKL SRYEGVWLTA SLFEGVWKKY SLYEGVWLSA KRFEGVWVKY RRFEGVWKKY SLFEGVWKKF AEYEGVWLLA KRIEGVWLKF RLFEGVWKKF AEIEGVWKKY RLLEGVWKKL KRLEGVWVKY RLIEGVWKKF SLYEGVWILA ALFEGVWKKF KRIEGVWVKL RLYEGVWLTA KEFEGVWIKF KRIEGVWIKY RLIEGVWKKL KLLEGVWVKF AEYEGVWVLA ARYEGVWVTA SLYEGVWITA ALYEGVWISA ALYEGVWLSA KLIEGVWIKF ALIEGVWKKY RRYEGVWLSA SRYEGVWVLA KRFEGVWVKF RLYEGVWVLA KRLEGVWIKY SELEGVWKKY AELEGVWKKL KRFEGVWIKL ALYEGVWVSA RELEGVWKKF SEYEGVWITA SRLEGVWKKL KEFEGVWLKY ALYEGVWLTA REYEGVWITA RRYEGVWITA KRLEGVWIKL ARIEGVWKKF SRYEGVWLSA KLFEGVWIKF KELEGVWIKL KRFEGVWLKF ARLEGVWKKF AEYEGVWITA SEYEGVWLTA ALLEGVWKKF ARYEGVWITA RELEGVWKKL REFEGVWKKL RLLEGVWKKF AEYEGVWILA ARYEGVWVLA SLIEGVWKKY REIEGVWKKL SEIEGVWKKL ARYEGVWLTA REYEGVWILA SEYEGVWLSA KEIEGVWIKL KLFEGVWLKL KLFEGVWVKL AEIEGVWKKL RLYEGVWITA RLLEGVWKKY REYEGVWVSA KLFEGVWLKF AEFEGVWKKF SELEGVWKKL KEFEGVWVKY ARYEGVWISA KEFEGVWIKY SEYEGVWLLA KRFEGVWLKL REYEGVWVLA SLYEGVWVLA KRIEGVWVKF KLLEGVWVKY KEIEGVWIKF SLLEGVWKKL KLLEGVWIKY KEFEGVWLKL RLYEGVWISA SRLEGVWKKF KLFEGVWLKY ARYEGVWLSA ARYEGVWILA KRIEGVWIKF KEIEGVWLKY REFEGVWKKY ALYEGVWILA RRLEGVWKKF REYEGVWVTA SEFEGVWKKL SLYEGVWVSA SLYEGVWVTA KLLEGVWIKL KRIEGVWLKL ALYEGVWITA REYEGVWLLA SRYEGVWISA REYEGVWLTA SLLEGVWKKF RLYEGVWVSA ARYEGVWLLA KELEGVWVKF KRLEGVWLKY KRIEGVWLKY KELEGVWIKY KLLEGVWLKF RLFEGVWKKY SEIEGVWKKF SELEGVWKKF AEYEGVWVTA KEIEGVWVKL KELEGVWIKF KRFEGVWVKL KLLEGVWLKY REIEGVWKKF ALIEGVWKKL KLFEGVWIKL RRYEGVWISA ARIEGVWKKL ARFEGVWKKY RRIEGVWKKY KLIEGVWVKL ARLEGVWKKY SRFEGVWKKF KELEGVWLKY AEFEGVWKKY KEIEGVWVKY KRLEGVWVKF ALFEGVWKKY KLFEGVWVKY ARFEGVWKKL ALLEGVWKKL ARLEGVWKKL SLYEGVWLLA ALFEGVWKKL REFEGVWKKF SRIEGVWKKY REIEGVWKKY RRYEGVWVTA SLIEGVWKKF KLIEGVWLKF SRYEGVWVSA KLFEGVWVKF KLIEGVWVKY SLFEGVWKKL ALYEGVWVTA SEYEGVWVTA RELEGVWKKY AEIEGVWKKF KEIEGVWLKF RRIEGVWKKF SLIEGVWKKL RLIEGVWKKY RLFEGVWKKL KRIEGVWIKL

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 361

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | VYEGVWKKAE → # Mutation peptides = 360

If you want to use IEDB tools to predict IC50, please use these format:

VYEGVWKKAE SYEGVWKKAE VREGVWKKAE VYEGVWKKAY RYEGVWKKAE AYEGVWKKAE VLEGVWKKAE VYEGVWKKAF VYEGVWKKAL VEEGVWKKAE VLEGVWKKTE ALEGVWKKAE SLEGVWKKAE VREGVWKKAL VLEGVWKKSE VEEGVWKKAL VEEGVWKKTE SREGVWKKAE VREGVWKKTE VEEGVWKKLE VREGVWKKSE VREGVWKKLE SEEGVWKKAE RLEGVWKKAE RREGVWKKAE VREGVWKKAF VEEGVWKKAF VREGVWKKAY AEEGVWKKAE AREGVWKKAE REEGVWKKAE VLEGVWKKAL VLEGVWKKAF VEEGVWKKSE VLEGVWKKAY VLEGVWKKLE VEEGVWKKAY SREGVWKKTE VLLGVWKKAL VRFGVWKKAF VRFGVWKKAY RREGVWKKAY AREGVWKKAF VEIGVWKKAY VLLGVWKKAY SEEGVWKKLE VLFGVWKKAL SLEGVWKKLE VLIGVWKKAL VEFGVWKKAF RREGVWKKSE SEEGVWKKAL AEEGVWKKSE REEGVWKKTE SEEGVWKKTE SLEGVWKKTE REEGVWKKAF SREGVWKKSE VLIGVWKKAF VRIGVWKKAY SEEGVWKKAF RREGVWKKAL SREGVWKKAF VEIGVWKKAF VRIGVWKKAL VRFGVWKKAL AEEGVWKKAF VRLGVWKKAL AREGVWKKSE VLIGVWKKAY ALEGVWKKAF VLLGVWKKAF REEGVWKKAL RREGVWKKAF ALEGVWKKSE AEEGVWKKLE SEEGVWKKSE VELGVWKKAL VRLGVWKKAF SLEGVWKKSE RLEGVWKKAY VRIGVWKKAF SEEGVWKKAY VEFGVWKKAL VELGVWKKAY AREGVWKKAY RLEGVWKKTE VEFGVWKKAY AREGVWKKTE SREGVWKKLE RREGVWKKTE SLEGVWKKAF SREGVWKKAY RLEGVWKKLE AEEGVWKKAY SLEGVWKKAY RLEGVWKKAF VLFGVWKKAF ALEGVWKKAY REEGVWKKAY ALEGVWKKAL AEEGVWKKTE AEEGVWKKAL RLEGVWKKAL SREGVWKKAL SLEGVWKKAL REEGVWKKSE ALEGVWKKLE VLFGVWKKAY ALEGVWKKTE RREGVWKKLE RLEGVWKKSE VEIGVWKKAL VELGVWKKAF AREGVWKKLE VRLGVWKKAY AREGVWKKAL REEGVWKKLE VRIGVWKVAF ALEGVWGKLE SREGVWLKLE RRLGVWKKAY REEGVWIKLE SLEGVWLKTE SLEGVWLKSE ALEGVWLKTE VEIGVWKLAY RRFGVWKKAY SLLGVWKKAL VRIGVWKVAY SRLGVWKKAY VRFGVWKVAL RREGVWLKSE VRFGVWKLAL SELGVWKKAL ARIGVWKKAL VELGVWKVAL ALIGVWKKAF RLEGVWLKTE AEEGVWLKTE AELGVWKKAY ALFGVWKKAY SEFGVWKKAL SEEGVWIKSE SREGVWGKSE VRIGVWKIAF RRIGVWKKAF ARLGVWKKAF REFGVWKKAF VLFGVWKIAF AEEGVWGKTE RLIGVWKKAL AREGVWGKTE AEEGVWGKLE ALEGVWLKLE ALEGVWLKSE ALEGVWGKSE AREGVWGKLE AEIGVWKKAL VEFGVWKLAF SRIGVWKKAY RREGVWLKTE VRIGVWKIAY SLEGVWIKLE AREGVWIKLE VRLGVWKLAL VLLGVWKIAY SLIGVWKKAY SEEGVWLKSE ARLGVWKKAL RLIGVWKKAF SRIGVWKKAL VEIGVWKVAF RELGVWKKAF RLLGVWKKAF VLIGVWKIAL VELGVWKIAY ALEGVWGKTE AELGVWKKAL ALIGVWKKAL AEEGVWGKSE VELGVWKVAY SLFGVWKKAY REEGVWIKSE REFGVWKKAL RELGVWKKAY SEEGVWGKLE SEFGVWKKAF VELGVWKIAL VRLGVWKIAY VRLGVWKLAY AREGVWIKSE VRFGVWKIAF RRFGVWKKAL RLEGVWIKTE VRIGVWKLAY VLIGVWKLAL REEGVWLKTE SRLGVWKKAL VLFGVWKLAL VLLGVWKIAF RLEGVWIKSE REEGVWLKSE VEIGVWKIAF VEFGVWKVAL SEEGVWIKTE VRLGVWKIAF VEFGVWKVAY REEGVWIKTE AEFGVWKKAF REIGVWKKAY SEEGVWIKLE VRLGVWKVAF VLFGVWKLAF RLFGVWKKAF VLLGVWKVAF AREGVWLKLE RREGVWGKSE ARFGVWKKAL VEIGVWKIAL VEIGVWKLAF VRLGVWKIAL RREGVWIKLE SLEGVWIKSE VLFGVWKIAL SEEGVWLKLE RREGVWGKLE VEFGVWKLAY RRLGVWKKAF VEIGVWKIAY VLIGVWKVAF RLLGVWKKAL AEEGVWLKLE VRIGVWKLAF VLFGVWKIAY VLLGVWKLAY AEFGVWKKAL VRLGVWKLAF SRFGVWKKAL SREGVWIKLE VRFGVWKLAF VLIGVWKIAY RLEGVWGKLE SEEGVWLKTE VLIGVWKIAF SLEGVWGKLE SLLGVWKKAF RLFGVWKKAL VLIGVWKLAY ALEGVWIKLE VRFGVWKVAF VELGVWKLAL VELGVWKIAF SLLGVWKKAY VRFGVWKIAY ARIGVWKKAY ALEGVWIKTE ALFGVWKKAL SEFGVWKKAY ARFGVWKKAY VLFGVWKVAL VRLGVWKVAL SLEGVWLKLE AEIGVWKKAY VLLGVWKIAL VEIGVWKLAL RLEGVWIKLE ALIGVWKKAY AEEGVWIKLE AEFGVWKKAY VLLGVWKVAL REEGVWLKLE VEFGVWKIAF RLEGVWLKSE SEEGVWGKTE SRFGVWKKAY VELGVWKLAF SLIGVWKKAF SEEGVWGKSE AEEGVWLKSE REIGVWKKAF RRFGVWKKAF VLIGVWKLAF REEGVWGKTE ALEGVWIKSE ARIGVWKKAF RLFGVWKKAY RLLGVWKKAY VEFGVWKIAL VRFGVWKLAY ALFGVWKKAF VLIGVWKVAL VRIGVWKVAL ARFGVWKKAF SEIGVWKKAL ALLGVWKKAF VRFGVWKIAL VLFGVWKVAF SEIGVWKKAF SEIGVWKKAY VEFGVWKVAF VLLGVWKLAF VLFGVWKLAY AEEGVWIKTE AEIGVWKKAF RLEGVWLKLE ALLGVWKKAY VLFGVWKVAY AREGVWLKTE VLLGVWKLAL REIGVWKKAL SLIGVWKKAL VRIGVWKIAL RREGVWGKTE SREGVWLKSE RREGVWLKLE REFGVWKKAY RLEGVWGKSE RRIGVWKKAY VEIGVWKVAY SRIGVWKKAF VLLGVWKVAY SELGVWKKAY SLFGVWKKAF AREGVWIKTE SLEGVWIKTE ARLGVWKKAY RRIGVWKKAL VEFGVWKLAL SREGVWGKLE SRLGVWKKAF AEEGVWIKSE SREGVWGKTE SREGVWLKTE VRFGVWKVAY VEFGVWKIAY RELGVWKKAL REEGVWGKSE SLEGVWGKTE RLIGVWKKAY AELGVWKKAF RREGVWIKSE SREGVWIKTE RLEGVWGKTE REEGVWGKLE RRLGVWKKAL VRLGVWKVAY VLIGVWKVAY AREGVWGKSE AREGVWLKSE ALLGVWKKAL SRFGVWKKAF VEIGVWKVAL SLEGVWGKSE VELGVWKLAY SLFGVWKKAL RREGVWIKTE SELGVWKKAF SREGVWIKSE VELGVWKVAF VRIGVWKLAL

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 354

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | YEGVWKKAEA → # Mutation peptides = 353

If you want to use IEDB tools to predict IC50, please use these format:

YEGVWKKAEA REGVWKKAEA YEGVWKKATA YEGVWKKAEL YEGVWKKALA YEGVWKKAEY AEGVWKKAEA YRGVWKKAEA YLGVWKKAEA YEGVWKKASA YEGVWKKAEF SEGVWKKAEA SEGVWKKASA SEGVWKKAEF YELVWKKAEY YEFVWKKAEL YLGVWKKAEF YELVWKKAEL YLGVWKKAEL AEGVWKKALA RRGVWKKAEA YRGVWKKAEL ALGVWKKAEA YELVWKKAEF REGVWKKAEF REGVWKKALA YRGVWKKATA YLGVWKKAEY AEGVWKKATA REGVWKKASA REGVWKKATA AEGVWKKAEY RLGVWKKAEA AEGVWKKAEF YRGVWKKALA AEGVWKKAEL YRGVWKKAEF YLGVWKKASA YLGVWKKATA SEGVWKKAEY YEIVWKKAEF SEGVWKKATA YEIVWKKAEY YEIVWKKAEL YLGVWKKALA SEGVWKKALA AEGVWKKASA YEFVWKKAEY SEGVWKKAEL YRGVWKKAEY YEFVWKKAEF REGVWKKAEL SRGVWKKAEA YRGVWKKASA REGVWKKAEY SLGVWKKAEA ARGVWKKAEA ARGVWKKALA ALGVWKKAEF AEGVWKKALL YEIVWKKVEL SELVWKKAEY REGVWKKALL SRGVWKKAEY ALGVWKKATA AEFVWKKAEY YEFVWKKIEL YRLVWKKAEL YRIVWKKAEL ARGVWKKAEL SRGVWKKATA SLGVWKKATA AEGVWKKATY SEGVWKKATL SELVWKKAEL RRGVWKKASA ALGVWKKAEL REIVWKKAEF SEGVWKKASF REFVWKKAEL YEIVWKKIEY SLGVWKKASA RLGVWKKALA SEGVWKKALY SEFVWKKAEY YEIVWKKLEF REIVWKKAEL SRGVWKKALA REGVWKKATL YLLVWKKAEL RLGVWKKAEL REGVWKKATY SEGVWKKASL YEFVWKKVEY YELVWKKLEY RELVWKKAEL RRGVWKKAEY SEIVWKKAEY AEGVWKKASF AEGVWKKALF RRGVWKKAEF YEFVWKKLEL YELVWKKIEY SEIVWKKAEL AELVWKKAEF AEGVWKKASY AEGVWKKALY YEIVWKKVEY ARGVWKKATA YEFVWKKVEF AEFVWKKAEL RELVWKKAEF REFVWKKAEF YEIVWKKIEF YELVWKKVEF YRFVWKKAEY REIVWKKAEY YLFVWKKAEL AEGVWKKATF RLGVWKKATA SLGVWKKAEL ALGVWKKAEY REGVWKKASF SEGVWKKALF REFVWKKAEY YEFVWKKLEF RLGVWKKASA YRLVWKKAEY AEIVWKKAEL SEFVWKKAEF RRGVWKKALA YELVWKKVEL YRFVWKKAEF YRFVWKKAEL YLLVWKKAEY SRGVWKKAEL RELVWKKAEY YELVWKKVEY SLGVWKKAEY SLGVWKKAEF REGVWKKATF AEGVWKKATL YRIVWKKAEY SEGVWKKATY YELVWKKLEF AEGVWKKASL AEFVWKKAEF YEIVWKKLEY AEIVWKKAEY YEFVWKKVEL YEFVWKKLEY REGVWKKASL YLFVWKKAEF SEIVWKKAEF ARGVWKKAEY RRGVWKKATA RLGVWKKAEY SLGVWKKALA YRLVWKKAEF AELVWKKAEY YELVWKKIEL SEGVWKKATF YEIVWKKIEL ALGVWKKALA ARGVWKKASA AELVWKKAEL RLGVWKKAEF YLFVWKKAEY YLIVWKKAEY YLLVWKKAEF YRIVWKKAEF YLIVWKKAEF AEIVWKKAEF SEFVWKKAEL SRGVWKKAEF YEIVWKKLEL YELVWKKIEF ARGVWKKAEF YLIVWKKAEL ALGVWKKASA SEGVWKKALL SRGVWKKASA REGVWKKALY YEFVWKKIEY YEIVWKKVEF SEGVWKKASY YELVWKKLEL SELVWKKAEF REGVWKKASY RRGVWKKAEL YEFVWKKIEF REGVWKKALF SLFVWKKAEY YRIVWKKLEY ARFVWKKAEF ALIVWKKAEF ARFVWKKAEL RLIVWKKAEY RRIVWKKAEF SLGVWKKATF ALGVWKKATY YRIVWKKLEF ARLVWKKAEY YLLVWKKLEY ALGVWKKASF YRLVWKKLEF RRFVWKKAEF YLIVWKKVEF RLGVWKKASL ALGVWKKATF ARGVWKKALF YLIVWKKLEL ARGVWKKALL RLGVWKKATF SLGVWKKATY YLIVWKKIEL RLGVWKKATL YRIVWKKLEL RRLVWKKAEY SLGVWKKALF YLIVWKKVEY RRIVWKKAEL SLGVWKKASY ALGVWKKALY RLIVWKKAEF ARIVWKKAEL RRGVWKKASL YRFVWKKIEY RLGVWKKATY SRGVWKKASL SLGVWKKATL RRGVWKKATY RLGVWKKALF YRFVWKKLEY SRIVWKKAEY SRGVWKKATY RRGVWKKATF YLLVWKKLEF YLFVWKKIEL RRGVWKKATL YRFVWKKVEF ALLVWKKAEY RLGVWKKASY YRLVWKKLEL SRGVWKKALL RRIVWKKAEY ALFVWKKAEF ARLVWKKAEF YRFVWKKVEL SLGVWKKASF RLGVWKKALY SRLVWKKAEF ALIVWKKAEY SRIVWKKAEF YRFVWKKIEF YRLVWKKIEY RLGVWKKALL YLFVWKKIEF SLIVWKKAEL RLLVWKKAEL YLIVWKKVEL SLFVWKKAEF YRFVWKKLEF SLLVWKKAEF YRIVWKKVEL YLLVWKKIEL YLFVWKKVEF RRFVWKKAEL ALFVWKKAEY SLFVWKKAEL YRLVWKKLEY ARGVWKKATL SLIVWKKAEY YLIVWKKIEF RLLVWKKAEF ARGVWKKATF RRGVWKKALF YLIVWKKIEY ARIVWKKAEY RRLVWKKAEF SRGVWKKATL ARGVWKKASL SRGVWKKASY RLFVWKKAEF SLLVWKKAEY RLIVWKKAEL RRFVWKKAEY SRLVWKKAEY ALIVWKKAEL YRLVWKKVEF RRGVWKKASY ARFVWKKAEY YLLVWKKVEY YRFVWKKVEY YLFVWKKIEY RRLVWKKAEL RLLVWKKAEY RLFVWKKAEL SLGVWKKALL RLFVWKKAEY SRIVWKKAEL YLFVWKKLEL ARLVWKKAEL ALGVWKKALL YRIVWKKIEF YRIVWKKVEF SRGVWKKATF ALGVWKKALF YLLVWKKLEL SRFVWKKAEF YRLVWKKVEY ARGVWKKASF YRIVWKKVEY YLIVWKKLEY ARGVWKKASY YLIVWKKLEF SRGVWKKALF ARIVWKKAEF SRFVWKKAEY YRLVWKKVEL ARGVWKKALY YRLVWKKIEF RRGVWKKASF SRGVWKKASF YRIVWKKIEL ALGVWKKATL YLLVWKKIEF YLLVWKKIEY YLFVWKKVEL YLFVWKKLEY RRGVWKKALY SLIVWKKAEF YLFVWKKVEY SRFVWKKAEL ALLVWKKAEL SLGVWKKALY YRIVWKKIEY YLLVWKKVEF ALGVWKKASL SLLVWKKAEL YRLVWKKIEL SRLVWKKAEL YRFVWKKIEL ALGVWKKASY ARGVWKKATY YRFVWKKLEL RLGVWKKASF ALFVWKKAEL YLFVWKKLEF YLLVWKKVEL SLGVWKKASL ALLVWKKAEF RRGVWKKALL SRGVWKKALY

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 348

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | EGVWKKAEAF → # Mutation peptides = 347

If you want to use IEDB tools to predict IC50, please use these format:

EGVWKKAEAF EGVWKKAEAL AGVWKKAEAF EGVWKKAEAY ELVWKKAEAF SGVWKKAEAF EEVWKKAEAF ERVWKKAEAF RGVWKKAEAF SEVWKKAEAF ERVWKKAETF ELVWKKAESF RRVWKKAEAF ERVWKKAEAY RLVWKKAEAF ERVWKKAESF ARVWKKAEAF ALVWKKAEAF ELVWKKAETF EEIWKKAEAF ELVWKKAEAY SLVWKKAEAF ERVWKKAELF ELIWKKAEAF ELLWKKAEAF EEVWKKAELF EELWKKAEAF EEVWKKAETF EEFWKKAEAF EEVWKKAEAL EEVWKKAESF ERFWKKAEAF ERVWKKAEAL ELVWKKAEAL EEVWKKAEAY ERIWKKAEAF ERLWKKAEAF SRVWKKAEAF ELFWKKAEAF AEVWKKAEAF REVWKKAEAF ELVWKKAELF ERFWKKALAF ERLWKKAEAL AEVWKKAESF ELLWKKAEAL EEIWKKAEAY ERLWKKAVAF RLVWKKAEAY RRLWKKAEAF SRVWKKAELF ERFWKKAVAF ELLWKKAIAF EEFWKKALAF ERFWKKAEAL RLVWKKAEAL SEVWKKAEAL SEVWKKAEAY EEIWKKAVAF EELWKKAEAY EEIWKKAEAL SEVWKKAELF ARIWKKAEAF RLFWKKAEAF SRIWKKAEAF ALFWKKAEAF SRVWKKAEAY AEVWKKAELF RRFWKKAEAF SRFWKKAEAF ERLWKKAEAY AEFWKKAEAF REVWKKAESF RRVWKKAETF EEIWKKALAF SEFWKKAEAF ERLWKKAIAF EELWKKALAF RLLWKKAEAF SEVWKKAESF ARVWKKAEAL SRLWKKAEAF RLVWKKAELF ELLWKKAEAY REVWKKAETF SLVWKKAELF ARVWKKAETF ELIWKKAEAL EELWKKAVAF ERIWKKAEAL REVWKKAELF RELWKKAEAF SRVWKKAETF REFWKKAEAF AELWKKAEAF EEFWKKAEAL SLIWKKAEAF SLVWKKAESF ERIWKKAEAY SRVWKKAEAL AEVWKKAEAL ELFWKKAEAY RLIWKKAEAF AEVWKKAETF EEIWKKAIAF SRVWKKAESF SELWKKAEAF ELIWKKAIAF RRVWKKAEAL ARVWKKAEAY ALVWKKAEAL ELIWKKAEAY ELLWKKALAF RRIWKKAEAF ERFWKKAIAF ELFWKKAIAF ERIWKKALAF EELWKKAIAF AEIWKKAEAF EELWKKAEAL ALLWKKAEAF ARVWKKAESF ERFWKKAEAY ALVWKKAELF SLVWKKAEAL ELLWKKAVAF SLVWKKAETF EEFWKKAEAY RRVWKKAESF SEVWKKAETF ERIWKKAIAF ELIWKKALAF RRVWKKAEAY RLVWKKAESF ALIWKKAEAF ERIWKKAVAF ELFWKKALAF ARVWKKAELF ELFWKKAEAL RRVWKKAELF ARLWKKAEAF SLVWKKAEAY REIWKKAEAF RLVWKKAETF SLFWKKAEAF ALVWKKAETF AEVWKKAEAY ARFWKKAEAF SEIWKKAEAF REVWKKAEAY SLLWKKAEAF ALVWKKAESF ELIWKKAVAF EEFWKKAVAF ALVWKKAEAY ERLWKKALAF REVWKKAEAL EEFWKKAIAF ELFWKKAVAF ELLWKKAIAY AEVWGKAELF SRVWGKAETF ARFWKKAEAY AEVWGKAESF EEFWKKAIAY SEIWKKAEAL EELWKKAVAY SLFWKKAEAY ERIWKKAIAL SLIWKKAEAY ERIWKKALAY ELFWKKALAY AELWKKAEAL ALVWLKAESF RLVWPKAESF ALIWKKAEAL ALVWPKAELF SEVWPKAETF RLFWKKAEAL ELLWKKALAY SRVWPKAELF ALVWGKAESF ELFWKKAIAL ELIWKKAVAL EELWKKAVAL ALLWKKAEAL RRVWLKAETF RRLWKKAEAL ARVWLKAELF ERFWKKALAL AEIWKKAEAY REFWKKAEAL ALFWKKAEAY ALVWPKAETF ARVWGKAELF EEIWKKALAY RLVWLKAETF ELLWKKAVAL ALVWLKAELF EEIWKKAVAL AEVWPKAELF AEVWPKAESF AEVWLKAETF ELLWKKAIAL RRIWKKAEAL AEVWGKAETF RRFWKKAEAL EEFWKKAVAY ALLWKKAEAY REVWGKAESF RLIWKKAEAY RRVWGKAESF ERLWKKALAY RRVWGKAELF EELWKKALAL RLLWKKAEAY ARIWKKAEAY SLVWGKAETF AEVWLKAELF RRVWPKAESF REVWGKAETF RRIWKKAEAY AEFWKKAEAL ARVWLKAETF RRLWKKAEAY SRLWKKAEAL ARVWPKAETF ARFWKKAEAL SLVWPKAETF RLVWGKAETF SRIWKKAEAY REVWPKAESF RLLWKKAEAL SLVWLKAELF REVWLKAESF EELWKKAIAL RRVWGKAETF SRVWGKAESF SLLWKKAEAL SEVWGKAETF ERLWKKAVAY SEIWKKAEAY ARVWPKAESF EEFWKKAVAL ELLWKKAVAY ALVWLKAETF RRFWKKAEAY EELWKKAIAY RELWKKAEAL REVWLKAELF RLVWLKAELF RLIWKKAEAL SRFWKKAEAL SEVWLKAETF REVWGKAELF ERLWKKAIAY RELWKKAEAY ELFWKKAVAL RLVWPKAELF EEIWKKAIAL ARVWGKAESF SEVWLKAESF SEFWKKAEAL ALVWGKAELF REIWKKAEAY ERIWKKAIAY RRVWLKAELF EEIWKKALAL ELIWKKAIAY ERFWKKAVAY ARVWPKAELF SRLWKKAEAY ELIWKKALAY SLFWKKAEAL SLLWKKAEAY RRVWPKAELF REIWKKAEAL SLVWLKAETF RLVWPKAETF ERLWKKAIAL ELFWKKAIAY ERIWKKALAL SLVWPKAESF ALVWGKAETF EEIWKKAVAY SELWKKAEAL REFWKKAEAY RRVWPKAETF ERFWKKALAY AEVWLKAESF ELFWKKALAL SRVWGKAELF SLVWLKAESF ERIWKKAVAY REVWPKAELF SRVWPKAETF ERFWKKAIAY ERLWKKAVAL ARLWKKAEAY RLVWLKAESF AEIWKKAEAL RLVWGKAELF SRVWLKAELF SEVWPKAESF SEVWGKAELF AELWKKAEAY SEFWKKAEAY ERLWKKALAL ERFWKKAIAL ARLWKKAEAL SRVWPKAESF RLFWKKAEAY AEFWKKAEAY SEVWPKAELF EELWKKALAY REVWLKAETF SEVWGKAESF SLIWKKAEAL ELIWKKALAL SLVWPKAELF SRVWLKAESF SRVWLKAETF SLVWGKAESF RRVWLKAESF SLVWGKAELF SEVWLKAELF EEFWKKALAL AEVWPKAETF EEFWKKAIAL ELIWKKAVAY ALFWKKAEAL ERIWKKAVAL ALIWKKAEAY ELLWKKALAL REVWPKAETF ARIWKKAEAL EEFWKKALAY SELWKKAEAY ELIWKKAIAL ARVWLKAESF EEIWKKAIAY RLVWGKAESF ARVWGKAETF ERFWKKAVAL SRIWKKAEAL ALVWPKAESF ELFWKKAVAY SRFWKKAEAY

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 361

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | GVWKKAEAFI → # Mutation peptides = 360

If you want to use IEDB tools to predict IC50, please use these format:

GVWKKAEAFI GRWKKAEAFI GEWKKAEAFI GVWKKAEAFY GVWKKAEAFF AVWKKAEAFI RVWKKAEAFI GVWKKAEAFL SVWKKAEAFI GLWKKAEAFI RLWKKAEAFI GRWKKAEAFY GRWKKAEATI GLWKKAEAFF ARWKKAEAFI SRWKKAEAFI GLWKKAEASI GEWKKAEALI GRWKKAEAFF GLWKKAEALI GLWKKAEAFY REWKKAEAFI GLWKKAEAFL GRWKKAEASI GEWKKAEAFY GEWKKAEATI RRWKKAEAFI GLWKKAEATI AEWKKAEAFI GEWKKAEAFF SEWKKAEAFI GRWKKAEAFL ALWKKAEAFI GRWKKAEALI GEWKKAEAFL GEWKKAEASI SLWKKAEAFI RRWKKAEASI GRFKKAEAFY RLWKKAEAFF SRWKKAEAFL ALWKKAEASI GLIKKAEAFY GLIKKAEAFL ARWKKAEAFL ARWKKAEATI AEWKKAEAFF RRWKKAEAFL SEWKKAEASI GRFKKAEAFF GEIKKAEAFY ALWKKAEAFF GRIKKAEAFF SEWKKAEAFL RLWKKAEALI SEWKKAEAFF REWKKAEALI ARWKKAEASI GEFKKAEAFL RRWKKAEAFY RLWKKAEAFL RLWKKAEATI REWKKAEAFY REWKKAEAFL GRIKKAEAFL SLWKKAEAFY SRWKKAEATI GRLKKAEAFF SEWKKAEAFY ARWKKAEAFY SLWKKAEAFF ARWKKAEALI GLLKKAEAFF RRWKKAEALI RLWKKAEAFY GRFKKAEAFL GELKKAEAFY ARWKKAEAFF GLFKKAEAFL ALWKKAEAFL GRLKKAEAFL AEWKKAEAFL GELKKAEAFF RRWKKAEATI RRWKKAEAFF SRWKKAEAFF ALWKKAEALI AEWKKAEATI ALWKKAEAFY ALWKKAEATI REWKKAEATI GRLKKAEAFY GLLKKAEAFY AEWKKAEAFY GLFKKAEAFY SLWKKAEATI SEWKKAEALI SRWKKAEALI GLLKKAEAFL REWKKAEAFF SEWKKAEATI GELKKAEAFL AEWKKAEALI AEWKKAEASI GEIKKAEAFL SLWKKAEALI GLFKKAEAFF GRIKKAEAFY SLWKKAEASI GEFKKAEAFF SLWKKAEAFL RLWKKAEASI REWKKAEASI GEFKKAEAFY GEIKKAEAFF SRWKKAEAFY SRWKKAEASI GLIKKAEAFF ARWKKAEALF SLLKKAEAFF SLWKKAEASY GEFKKAELFY GEFKKAEIFF SLWKKAEALY SEWKKAEASY SEWKKAEALF SRWKKAEALY GEIKKAELFF GELKKAEVFY GRLKKAELFF SRFKKAEAFF SEWKKAEATF REWKKAEASY GRFKKAEVFL SRWKKAEALF ALFKKAEAFF GRIKKAEIFF ARLKKAEAFY GELKKAELFF RRWKKAEALL SEFKKAEAFF GRIKKAELFF GLLKKAEVFF SEWKKAEASF GELKKAEIFL GELKKAEVFF RRWKKAEATY GEFKKAELFF RLIKKAEAFF SEWKKAEASL ARWKKAEALY SRWKKAEALL AEWKKAEALF GLLKKAEVFL ALWKKAEALL REIKKAEAFL AEWKKAEATL GEFKKAEIFL SLLKKAEAFL SLLKKAEAFY SELKKAEAFY SEFKKAEAFL GRIKKAEVFF GLIKKAEVFY RRWKKAEATL RLWKKAEATY ARWKKAEATY RLIKKAEAFL ARFKKAEAFF SELKKAEAFL RLWKKAEALF ARWKKAEALL RRFKKAEAFF ARIKKAEAFF ARWKKAEATF ALLKKAEAFY GRFKKAEVFF AELKKAEAFL GLLKKAELFF SLWKKAEASL SRWKKAEASL GLIKKAEIFY RLWKKAEALY ALWKKAEALY GELKKAELFL RLWKKAEASF GLFKKAEIFY RLWKKAEASY AEWKKAEASY GRFKKAEVFY GLFKKAELFF RRWKKAEALF GEIKKAEIFY RLWKKAEALL REFKKAEAFL AEWKKAEASL RRWKKAEATF GEIKKAELFL RRIKKAEAFF ALIKKAEAFF GLLKKAEIFF AEFKKAEAFF GLIKKAEIFF GRFKKAEIFL REIKKAEAFY ARWKKAEASY AEIKKAEAFF SELKKAEAFF GLFKKAEIFL GRFKKAELFF SEIKKAEAFY RRLKKAEAFY GLFKKAELFY SRLKKAEAFF SLWKKAEATY SEFKKAEAFY SRLKKAEAFY GRLKKAEVFF RLLKKAEAFY ARFKKAEAFL GRLKKAELFL GEIKKAEVFL ALWKKAEALF RLWKKAEASL REIKKAEAFF GRFKKAEIFF SLWKKAEALF RELKKAEAFY GRIKKAELFL RLWKKAEATL RRWKKAEASL RRIKKAEAFY AELKKAEAFY SLWKKAEATL ALWKKAEASL ALWKKAEATY SLIKKAEAFY GELKKAELFY SEIKKAEAFF SEIKKAEAFL RLFKKAEAFY GLFKKAELFL GRLKKAELFY GLLKKAELFY SRWKKAEASF SRIKKAEAFY ARWKKAEASF REWKKAEALY ALWKKAEASF GRFKKAELFL REWKKAEALF GEFKKAELFL RELKKAEAFF AEWKKAEALY SRWKKAEATL ARFKKAEAFY AEWKKAEALL GRIKKAEVFY SEWKKAEATL REFKKAEAFF ARIKKAEAFY ALWKKAEASY GLIKKAELFY GRIKKAEVFL GELKKAEIFF RLWKKAEATF REWKKAEASL SRIKKAEAFF REWKKAEATL GRFKKAEIFY SLIKKAEAFL GRLKKAEVFL ARWKKAEATL SRFKKAEAFY ALIKKAEAFY GLLKKAEIFL ALFKKAEAFL RELKKAEAFL REWKKAEATY RRFKKAEAFY RRWKKAEASF RLIKKAEAFY SRLKKAEAFL SLWKKAEATF ARIKKAEAFL REFKKAEAFY ALFKKAEAFY GLLKKAEIFY RLFKKAEAFF GELKKAEVFL ARLKKAEAFL GLLKKAELFL REWKKAEALL AEIKKAEAFL GRFKKAELFY SLWKKAEALL ALIKKAEAFL SLFKKAEAFF GLLKKAEVFY SEWKKAEALL RLFKKAEAFL GLFKKAEVFF RRLKKAEAFF GEIKKAELFY SRWKKAEASY GELKKAEIFY GLIKKAELFL RLLKKAEAFL AEWKKAEATF SRWKKAEATY ALLKKAEAFF ARLKKAEAFF GLIKKAEVFL GLFKKAEIFF GEIKKAEVFF AELKKAEAFF REWKKAEASF GRLKKAEIFL SRIKKAEAFL SLWKKAEASF SLFKKAEAFY GRLKKAEVFY GRIKKAEIFY GEFKKAEVFF GEIKKAEIFF SRFKKAEAFL GRLKKAEIFF GEFKKAEVFY AEWKKAEATY GRIKKAEIFL REWKKAEATF RRIKKAEAFL RRLKKAEAFL ALLKKAEAFL AEFKKAEAFY ALWKKAEATL RLLKKAEAFF SRWKKAEATF GEIKKAEIFL AEWKKAEASF GLIKKAEIFL GRLKKAEIFY GEFKKAEIFY GEIKKAEVFY SEWKKAEALY SLIKKAEAFF RRWKKAEASY GLFKKAEVFY GLIKKAELFF SEWKKAEATY GRIKKAELFY GEFKKAEVFL AEFKKAEAFL RRFKKAEAFL ALWKKAEATF GLIKKAEVFF AEIKKAEAFY ARWKKAEASL RRWKKAEALY SLFKKAEAFL GLFKKAEVFL

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 373

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | VWKKAEAFIQ → # Mutation peptides = 372

If you want to use IEDB tools to predict IC50, please use these format:

VWKKAEAFIQ VWLKAEAFIQ VWKKAEAFIY SWKKAEAFIQ VLKKAEAFIQ VWKKAEAFIF VWIKAEAFIQ RWKKAEAFIQ VRKKAEAFIQ VEKKAEAFIQ VWFKAEAFIQ AWKKAEAFIQ VWKKAEAFIL VEKKAEAFIL ARKKAEAFIQ VWIKAEAFIY RLKKAEAFIQ VRKKAEAFSQ VLKKAEAFIF VWLKAEAFIY AEKKAEAFIQ VEKKAEAFTQ VRKKAEAFTQ SLKKAEAFIQ VWIKAEAFIL REKKAEAFIQ VLKKAEAFIY ALKKAEAFIQ VEKKAEAFIF VEKKAEAFSQ VWLKAEAFIF VWFKAEAFIY VLKKAEAFSQ VRKKAEAFIY VWFKAEAFIF VLKKAEAFTQ SRKKAEAFIQ VLKKAEAFLQ VEKKAEAFIY VLKKAEAFIL SEKKAEAFIQ VWIKAEAFIF VWLKAEAFIL VRKKAEAFIF VWFKAEAFIL VRKKAEAFLQ RRKKAEAFIQ VRKKAEAFIL VEKKAEAFLQ RRKKAEAFIF ALKKAEAFLQ VRIKAEAFIL AEKKAEAFIL VELKAEAFIY RRKKAEAFSQ REKKAEAFIY RLKKAEAFIY SLKKAEAFTQ VELKAEAFIF VRIKAEAFIY VLIKAEAFIY VLLKAEAFIY AEKKAEAFLQ REKKAEAFLQ AEKKAEAFIY VRFKAEAFIL VRFKAEAFIY VLIKAEAFIL RRKKAEAFLQ VELKAEAFIL SEKKAEAFIF SEKKAEAFIL SRKKAEAFIF RLKKAEAFSQ SRKKAEAFSQ SEKKAEAFIY RLKKAEAFTQ VEFKAEAFIL VRLKAEAFIY RLKKAEAFLQ AEKKAEAFIF ARKKAEAFLQ SRKKAEAFIY VLFKAEAFIL VEFKAEAFIF RRKKAEAFIY RLKKAEAFIF VEIKAEAFIY VRFKAEAFIF REKKAEAFIF VLFKAEAFIF SRKKAEAFIL SLKKAEAFSQ VEIKAEAFIF ARKKAEAFIF REKKAEAFTQ VEIKAEAFIL ARKKAEAFTQ VRLKAEAFIF SEKKAEAFSQ ARKKAEAFIY AEKKAEAFSQ SLKKAEAFLQ ALKKAEAFIY VLFKAEAFIY SRKKAEAFLQ SLKKAEAFIF ARKKAEAFSQ SLKKAEAFIL VRIKAEAFIF SEKKAEAFLQ ALKKAEAFSQ VRLKAEAFIL RRKKAEAFTQ VLIKAEAFIF ALKKAEAFIF RLKKAEAFIL VLLKAEAFIL SEKKAEAFTQ ALKKAEAFIL SLKKAEAFIY RRKKAEAFIL VEFKAEAFIY REKKAEAFSQ AEKKAEAFTQ ALKKAEAFTQ SRKKAEAFTQ REKKAEAFIL VLLKAEAFIF ARKKAEAFIL VELKAEALIF REIKAEAFSQ VRFKAEAVIL AELKAEAFIY SLIKAEAFIY ALFKAEAFLQ ALFKAEAFIY SEFKAEAFIL RRIKAEAFIY RLLKAEAFSQ SRIKAEAFLQ ARLKAEAFIL VLLKAEAVIF VLLKAEAIIL ALIKAEAFLQ VEFKAEAVIL ARIKAEAFTQ ALFKAEAFIL VEIKAEAIIL ARFKAEAFSQ ARIKAEAFIY VRFKAEAIIF AEFKAEAFTQ VEIKAEAVIL VLLKAEAVIL SELKAEAFLQ AELKAEAFLQ SEIKAEAFIF VEIKAEALIY VLIKAEALIL VRLKAEAIIY SLFKAEAFSQ SEIKAEAFLQ SLFKAEAFLQ SEFKAEAFSQ SLLKAEAFIL SEIKAEAFTQ SRIKAEAFIY VRIKAEAVIL VLIKAEALIF RRLKAEAFIY ALFKAEAFIF REFKAEAFTQ VRFKAEAVIY ALFKAEAFSQ VLIKAEAIIY VLFKAEALIL VEFKAEAIIL VLFKAEAVIF ARFKAEAFIY SELKAEAFTQ VRFKAEALIL VELKAEAVIY VEIKAEAIIF RELKAEAFLQ SELKAEAFIL VRLKAEAVIL VEFKAEAIIY VRLKAEALIL SELKAEAFIF VELKAEALIY RLFKAEAFSQ RRIKAEAFLQ RRFKAEAFIY RLLKAEAFIY VEIKAEAIIY RRLKAEAFTQ SRFKAEAFIF RLFKAEAFIY VEIKAEALIL VLIKAEAVIY RLLKAEAFIL VLFKAEALIY ALLKAEAFSQ RRIKAEAFSQ ALIKAEAFIL RRIKAEAFIF VRFKAEAIIY VRFKAEALIF SLFKAEAFTQ SEFKAEAFTQ SLIKAEAFIL SRFKAEAFLQ SRIKAEAFIL AEIKAEAFIY AEIKAEAFIF ALLKAEAFIL RLFKAEAFTQ AELKAEAFIF VELKAEALIL REFKAEAFLQ SRLKAEAFIF RELKAEAFIY RELKAEAFIF RLIKAEAFLQ RLIKAEAFTQ VEIKAEALIF REIKAEAFLQ ARIKAEAFIL VRIKAEALIF VLFKAEAVIY VEFKAEAIIF ALIKAEAFIY SRIKAEAFSQ REIKAEAFTQ RLIKAEAFIL VLFKAEAIIY SLIKAEAFLQ VLLKAEAVIY ARFKAEAFTQ VEIKAEAVIF RRFKAEAFIF REIKAEAFIY ARFKAEAFIL VEFKAEAVIY RLLKAEAFTQ SLLKAEAFIF SRLKAEAFTQ VEFKAEALIY VRIKAEAIIL SRLKAEAFSQ SELKAEAFIY SRLKAEAFLQ VRIKAEALIY RRFKAEAFIL ARIKAEAFSQ SLIKAEAFSQ AEFKAEAFIY ALIKAEAFIF VLIKAEAVIF RLIKAEAFIY AEFKAEAFIF AELKAEAFSQ VLFKAEAIIF VRLKAEALIF SLFKAEAFIL VLIKAEALIY SLFKAEAFIF VRLKAEAIIL AEFKAEAFSQ VRFKAEAIIL VLIKAEAVIL AELKAEAFTQ VLFKAEALIF RLIKAEAFSQ RLLKAEAFLQ AEIKAEAFLQ ARFKAEAFLQ VLLKAEALIY VLFKAEAIIL AEFKAEAFIL AEIKAEAFTQ REFKAEAFIL VELKAEAIIY SRFKAEAFIL SEFKAEAFIY VLIKAEAIIF ALIKAEAFTQ ARFKAEAFIF ARIKAEAFLQ VRIKAEALIL AELKAEAFIL AEIKAEAFSQ RRFKAEAFTQ RRLKAEAFIF VELKAEAIIL SEIKAEAFIL SRIKAEAFIF RRLKAEAFLQ VLLKAEALIL ALFKAEAFTQ SLLKAEAFIY VRIKAEAVIF AEFKAEAFLQ ARIKAEAFIF SRFKAEAFIY ARLKAEAFIY ARLKAEAFSQ SRLKAEAFIL REFKAEAFIF ALLKAEAFTQ ARLKAEAFLQ ALIKAEAFSQ VEFKAEALIL RRFKAEAFSQ SRFKAEAFTQ VRLKAEALIY AEIKAEAFIL SLIKAEAFTQ RLFKAEAFLQ RLFKAEAFIL VLFKAEAVIL ALLKAEAFIY VRIKAEAIIY REIKAEAFIF RRIKAEAFIL VRIKAEAVIY VEFKAEAVIF RRLKAEAFSQ SEFKAEAFIF SRIKAEAFTQ SLLKAEAFLQ RLLKAEAFIF VRFKAEALIY RRIKAEAFTQ VRIKAEAIIF ALLKAEAFLQ SLLKAEAFSQ VEFKAEALIF RELKAEAFSQ SEIKAEAFIY VRFKAEAVIF RLFKAEAFIF SELKAEAFSQ VRLKAEAVIF VEIKAEAVIY RRFKAEAFLQ VELKAEAVIF SLFKAEAFIY SEFKAEAFLQ VLLKAEAIIF ARLKAEAFTQ RELKAEAFIL VLIKAEAIIL VELKAEAIIF REIKAEAFIL VELKAEAVIL SRLKAEAFIY REFKAEAFSQ SRFKAEAFSQ ARLKAEAFIF REFKAEAFIY SEIKAEAFSQ VLLKAEALIF VLLKAEAIIY RELKAEAFTQ SLLKAEAFTQ VRLKAEAVIY SLIKAEAFIF RRLKAEAFIL VRLKAEAIIF RLIKAEAFIF ALLKAEAFIF

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 307

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | WKKAEAFIQP → # Mutation peptides = 306

If you want to use IEDB tools to predict IC50, please use these format:

WKKAEAFIQP WKKAEAFIQY WRKAEAFIQP WKKAEAFIQL RKKAEAFIQP AKKAEAFIQP WLKAEAFIQP WKKAEAFIQF SKKAEAFIQP WEKAEAFIQP WEKAEAFILP WEKAEAFIQL WEKAEAFIQF ALKAEAFIQP WEKAEAFIQY WLKAEAFIQY WLKAEAFIQL RLKAEAFIQP WRKAEAFILP WRKAEAFIQL WLKAEAFIQF WEKAEAFITP WLKAEAFISP REKAEAFIQP WRKAEAFISP WLKAEAFITP ARKAEAFIQP AEKAEAFIQP SLKAEAFIQP WRKAEAFITP WRKAEAFIQY WEKAEAFISP RRKAEAFIQP SRKAEAFIQP SEKAEAFIQP WRKAEAFIQF WLKAEAFILP SEKAEAFILP WLFAEAFIQL SLKAEAFIQY WLFAEAFIQY ARKAEAFILP RRKAEAFIQF ALKAEAFISP WELAEAFIQY WEIAEAFIQF SLKAEAFIQF AEKAEAFISP WELAEAFIQF RLKAEAFIQF WLIAEAFIQL ARKAEAFIQL SRKAEAFITP RRKAEAFITP ALKAEAFIQF RRKAEAFISP WRIAEAFIQL ALKAEAFIQY RLKAEAFIQY WLLAEAFIQL SEKAEAFIQL RLKAEAFIQL RRKAEAFIQY ARKAEAFIQF WEIAEAFIQY SLKAEAFISP ARKAEAFISP WRLAEAFIQL AEKAEAFIQY WEFAEAFIQF WLLAEAFIQF WLIAEAFIQF ALKAEAFITP RRKAEAFIQL SRKAEAFIQF ARKAEAFIQY WEIAEAFIQL WRIAEAFIQY AEKAEAFILP SEKAEAFITP AEKAEAFITP WLIAEAFIQY REKAEAFISP REKAEAFITP WRLAEAFIQF SLKAEAFITP SRKAEAFIQL WRFAEAFIQY WRIAEAFIQF SLKAEAFIQL WEFAEAFIQY WRFAEAFIQF REKAEAFILP ALKAEAFILP WLFAEAFIQF REKAEAFIQF RLKAEAFITP REKAEAFIQL AEKAEAFIQL RLKAEAFILP REKAEAFIQY WRLAEAFIQY WEFAEAFIQL WRFAEAFIQL SRKAEAFISP WLLAEAFIQY SEKAEAFIQF SEKAEAFISP ARKAEAFITP AEKAEAFIQF SLKAEAFILP ALKAEAFIQL RLKAEAFISP SRKAEAFILP SEKAEAFIQY WELAEAFIQL SRKAEAFIQY RRKAEAFILP WRFAEAFVQY SLKAEAFLTP WEFAEAFVQL WELAEAFLQY WELAEAFVQY SRKAEAFLLP WLIAEAFVQY RRIAEAFIQY RRIAEAFIQF ARLAEAFIQF AEFAEAFIQL WLFAEAFVQL SLKAEAFLLP ARKAEAFVLP SEKAEAFVLP SEKAEAFVTP RRLAEAFIQF RLKAEAFVLP WRLAEAFLQL WEFAEAFLQF SLFAEAFIQL WRIAEAFVQL REFAEAFIQF ALKAEAFVSP RELAEAFIQF WEIAEAFLQL SELAEAFIQF WEIAEAFVQL RLKAEAFVSP SELAEAFIQY SRLAEAFIQY SEKAEAFLTP ARKAEAFVTP WRFAEAFLQY ARLAEAFIQL WEFAEAFVQY RLKAEAFLLP WEFAEAFLQL AEFAEAFIQY WLFAEAFLQF REKAEAFVLP RLKAEAFLSP SLKAEAFLSP SEKAEAFLSP SRLAEAFIQF ARIAEAFIQF REKAEAFVTP WLFAEAFVQY AEFAEAFIQF SLIAEAFIQL RRKAEAFLTP RRKAEAFLLP WLIAEAFLQF WELAEAFLQF AEKAEAFVLP REIAEAFIQL ARKAEAFLSP ARFAEAFIQF SRKAEAFLTP ALFAEAFIQY SRLAEAFIQL RELAEAFIQL RLIAEAFIQL WLLAEAFLQY SLIAEAFIQF ARFAEAFIQL RLKAEAFLTP SLLAEAFIQF RLKAEAFVTP RRKAEAFVLP SRKAEAFLSP WRFAEAFLQL SLKAEAFVLP SLKAEAFVTP WRIAEAFVQY WRLAEAFVQF WLLAEAFVQL ALIAEAFIQL ALLAEAFIQF WEIAEAFVQF RRLAEAFIQL REFAEAFIQY ALFAEAFIQL WRIAEAFVQF WLLAEAFVQY WELAEAFVQL SEKAEAFLLP WLIAEAFLQY WRLAEAFVQL ALFAEAFIQF WEFAEAFVQF SRKAEAFVSP ALKAEAFVLP SRIAEAFIQF ARFAEAFIQY WLIAEAFVQF WRIAEAFLQY WLFAEAFLQL ALIAEAFIQF WLLAEAFLQL WRFAEAFVQL AEIAEAFIQF SLLAEAFIQL SRIAEAFIQY SRIAEAFIQL AEKAEAFLLP WEIAEAFLQY SLIAEAFIQY SLFAEAFIQY RRIAEAFIQL REKAEAFLLP RLFAEAFIQF SRFAEAFIQY SEIAEAFIQY WRIAEAFLQL WLFAEAFVQF RRKAEAFLSP WLIAEAFVQL AEKAEAFVTP WRLAEAFLQF AEKAEAFLTP AEIAEAFIQL WEIAEAFVQY RLIAEAFIQY WLLAEAFVQF RLIAEAFIQF ALKAEAFLTP ARKAEAFVSP SEFAEAFIQL RLFAEAFIQL ALKAEAFVTP REKAEAFLSP WRIAEAFLQF SLFAEAFIQF ARLAEAFIQY AELAEAFIQL WRLAEAFVQY ARIAEAFIQL SLKAEAFVSP REFAEAFIQL RLFAEAFIQY SRFAEAFIQF ALKAEAFLSP WEIAEAFLQF RRLAEAFIQY SRFAEAFIQL WELAEAFVQF ALLAEAFIQL REKAEAFVSP RRKAEAFVSP SEFAEAFIQY WEFAEAFLQY AELAEAFIQF ALLAEAFIQY WELAEAFLQL WRFAEAFVQF ALKAEAFLLP RRFAEAFIQY RLLAEAFIQF WLIAEAFLQL SRKAEAFVLP WRLAEAFLQY SRKAEAFVTP WLLAEAFLQF AEKAEAFVSP SLLAEAFIQY REIAEAFIQY RRFAEAFIQL RLLAEAFIQY ARKAEAFLLP ARKAEAFLTP SEIAEAFIQF ARIAEAFIQY SEFAEAFIQF RELAEAFIQY WLFAEAFLQY AEIAEAFIQY REKAEAFLTP WRFAEAFLQF RRKAEAFVTP AEKAEAFLSP SEKAEAFVSP SEIAEAFIQL RRFAEAFIQF ALIAEAFIQY REIAEAFIQF RLLAEAFIQL AELAEAFIQY SELAEAFIQL

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 361

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | KKAEAFIQPI → # Mutation peptides = 360

If you want to use IEDB tools to predict IC50, please use these format:

KKAEAFIQPI KEAEAFIQPI KKAEAFIQPL RKAEAFIQPI KRAEAFIQPI SKAEAFIQPI KKAEAFIQPY AKAEAFIQPI KKAEAFIQPF KLAEAFIQPI KEAEAFIQPF KRAEAFIQPF RLAEAFIQPI KEAEAFIQPY KLAEAFIQTI KRAEAFIQLI SEAEAFIQPI KRAEAFIQSI KRAEAFIQPL AEAEAFIQPI KLAEAFIQPL KRAEAFIQTI ARAEAFIQPI KEAEAFIQSI ALAEAFIQPI KLAEAFIQPY REAEAFIQPI SRAEAFIQPI KLAEAFIQSI SLAEAFIQPI KEAEAFIQTI KEAEAFIQLI RRAEAFIQPI KRAEAFIQPY KEAEAFIQPL KLAEAFIQPF KLAEAFIQLI ALAEAFIQPY SRAEAFIQLI SLAEAFIQPL AEAEAFIQPL SLAEAFIQPY KEFEAFIQPY ARAEAFIQPY ALAEAFIQSI KELEAFIQPY RLAEAFIQPF RLAEAFIQSI KRIEAFIQPF RLAEAFIQLI SRAEAFIQTI KEFEAFIQPL SRAEAFIQPY SLAEAFIQTI KLFEAFIQPL SLAEAFIQLI ALAEAFIQTI RRAEAFIQPF KRLEAFIQPY KELEAFIQPF KEFEAFIQPF RRAEAFIQPL KRIEAFIQPL KLIEAFIQPF ALAEAFIQLI KLFEAFIQPF KLLEAFIQPF SRAEAFIQPL SEAEAFIQPY ARAEAFIQSI RLAEAFIQTI REAEAFIQPY RRAEAFIQTI ARAEAFIQTI SLAEAFIQPF REAEAFIQTI SRAEAFIQSI ALAEAFIQPL KRLEAFIQPL KRFEAFIQPL KLLEAFIQPY KRIEAFIQPY KELEAFIQPL REAEAFIQPF KLIEAFIQPL RLAEAFIQPL AEAEAFIQTI RLAEAFIQPY KEIEAFIQPL KLIEAFIQPY REAEAFIQLI SLAEAFIQSI AEAEAFIQSI REAEAFIQPL SEAEAFIQSI RRAEAFIQSI RRAEAFIQPY ARAEAFIQLI KEIEAFIQPF KEIEAFIQPY KLFEAFIQPY KRLEAFIQPF ARAEAFIQPL AEAEAFIQLI SEAEAFIQLI KLLEAFIQPL ARAEAFIQPF SEAEAFIQPF ALAEAFIQPF SRAEAFIQPF KRFEAFIQPY AEAEAFIQPY RRAEAFIQLI KRFEAFIQPF REAEAFIQSI SEAEAFIQPL AEAEAFIQPF SEAEAFIQTI RRIEAFIQPL KLLEAFIIPF AEAEAFILLI SEAEAFILSI SRAEAFIILI KRIEAFILPF RLAEAFIITI KEFEAFILPY SEAEAFILTI KELEAFILPF ALAEAFIISI AEFEAFIQPY KLLEAFILPL KEIEAFILPY KEFEAFIIPL KRFEAFILPL REFEAFIQPY KEIEAFIIPF ARIEAFIQPL AELEAFIQPY KLFEAFIVPF KRLEAFIIPY KRLEAFIIPF SRIEAFIQPY KLIEAFIVPL RRAEAFIISI KRFEAFIVPL SLAEAFILTI REIEAFIQPY KRLEAFIVPL KEIEAFIVPY AEIEAFIQPY SLIEAFIQPY KLLEAFILPY KLIEAFIVPY RRAEAFILLI REAEAFIVTI KLLEAFIVPL KEFEAFILPL SEFEAFIQPL KRFEAFIVPF ARAEAFIVLI ALLEAFIQPF AEAEAFIISI RRLEAFIQPL ALAEAFIITI RLAEAFIVTI AEAEAFIITI ARLEAFIQPF SRAEAFIVTI KEFEAFIIPY REAEAFIITI KELEAFILPL KELEAFIIPL KRFEAFIIPF AEFEAFIQPL ARIEAFIQPY RLLEAFIQPY SRFEAFIQPF SLAEAFIISI ARFEAFIQPY ALFEAFIQPL KRIEAFILPY SEIEAFIQPL RRAEAFIVTI ARLEAFIQPY ALFEAFIQPF SLLEAFIQPF ARAEAFIILI RLIEAFIQPY AELEAFIQPL RLAEAFILSI SEFEAFIQPF KLIEAFILPY KLFEAFIIPY KRIEAFIIPL REFEAFIQPL SLAEAFIILI SRAEAFIISI AEFEAFIQPF RRFEAFIQPF RLAEAFILTI SRLEAFIQPL KLFEAFIIPF KRLEAFILPF RLAEAFIVLI KRFEAFIVPY KEFEAFIVPL REAEAFIVLI KLFEAFIVPL RLAEAFILLI RRFEAFIQPL ARAEAFILLI ALIEAFIQPF ALAEAFILSI AEAEAFIVLI KRFEAFIIPY KEFEAFIVPF AEIEAFIQPL KELEAFIVPL ARAEAFILSI RRLEAFIQPF ALAEAFIVLI ALAEAFIVTI KEFEAFILPF SEAEAFIISI KLIEAFIVPF ALFEAFIQPY ALLEAFIQPY KRLEAFIIPL RRAEAFIILI REAEAFIISI KRIEAFIVPY SRAEAFIITI SRAEAFIVLI KLLEAFIIPY ARAEAFIVTI RLFEAFIQPY ARLEAFIQPL REAEAFILLI KELEAFIVPY KRLEAFIVPF KRFEAFILPF KRLEAFILPL SLFEAFIQPF KELEAFILPY KRFEAFIIPL SEAEAFIVSI KLLEAFILPF KRIEAFIIPF KLFEAFIIPL SLAEAFIVLI SRAEAFILLI KLFEAFILPF ALIEAFIQPY SLAEAFIVSI KLLEAFIVPY SLIEAFIQPF KLFEAFILPY ALAEAFILLI SRAEAFILTI ARFEAFIQPF SLFEAFIQPY RLFEAFIQPL KRIEAFIVPF RLAEAFIISI SELEAFIQPF RLIEAFIQPF RRLEAFIQPY SRIEAFIQPF ARAEAFIVSI RLIEAFIQPL ALAEAFIVSI SRAEAFIVSI AEAEAFIVTI SEIEAFIQPY KLIEAFILPF SEIEAFIQPF RELEAFIQPF ALAEAFILTI RRAEAFIVLI SEAEAFIILI AELEAFIQPF RRIEAFIQPF SRLEAFIQPY ARAEAFILTI REAEAFIVSI RLLEAFIQPL SELEAFIQPY SRAEAFILSI KLFEAFILPL KEFEAFIIPF KRIEAFILPL SEAEAFIVLI REAEAFILSI KLIEAFIIPY KLLEAFIVPF SLLEAFIQPL AEAEAFILSI KEIEAFIIPY AEAEAFILTI AEAEAFIILI REAEAFILTI RELEAFIQPY KEIEAFILPL KEFEAFIVPY SELEAFIQPL KELEAFIIPF KLLEAFIIPL RLAEAFIVSI ALAEAFIILI SLAEAFILSI KLIEAFILPL SRLEAFIQPF REIEAFIQPL KEIEAFILPF ARAEAFIITI RLFEAFIQPF REAEAFIILI SEAEAFIVTI SRFEAFIQPL SLAEAFIVTI SRIEAFIQPL RRAEAFIVSI REIEAFIQPF AEAEAFIVSI RRAEAFILSI KRFEAFILPY SLFEAFIQPL KEIEAFIVPL KRIEAFIIPY KELEAFIIPY RLLEAFIQPF KRLEAFILPY SRFEAFIQPY ARFEAFIQPL KLIEAFIIPF RRIEAFIQPY ARAEAFIISI RRFEAFIQPY RLAEAFIILI SLLEAFIQPY KLFEAFIVPY SLAEAFILLI ALLEAFIQPL KEIEAFIVPF SLIEAFIQPL SEAEAFIITI ARIEAFIQPF KRIEAFIVPL SEAEAFILLI KEIEAFIIPL SLAEAFIITI REFEAFIQPF ALIEAFIQPL KLIEAFIIPL RRAEAFIITI RRAEAFILTI KELEAFIVPF SEFEAFIQPY RELEAFIQPL AEIEAFIQPF KRLEAFIVPY

No HLA-A\*11:01 with 9, Use the overall attention for pepAAtype-peppsition

# Samples = 334

\*\*\*\*\*\*\*\*\*\* HLA-A\*11:01 | EAFIQPITR → # Mutation peptides = 333

If you want to use IEDB tools to predict IC50, please use these format:

EAFIQPITR ERFIQPITR EAFIQPITF EAFIQPITY RAFIQPITR ELFIQPITR EAFIQPITL EEFIQPITR SAFIQPITR AAFIQPITR EEFIQPITL EAFDQPITY EAFDQPITL ELFIQPITF AEFIQPITR ERFIQPITF EAFPQPITY SLFIQPITR ERFIQPITY SRFIQPITR EAFEQPITL SEFIQPITR EAFPQPITL ELFIQPITL EAFPQPITF ERFIQPITL RRFIQPITR EAFEQPITY RLFIQPITR EAFDQPITF ELFIQPITY ALFIQPITR EAFEQPITF EEFIQPITF ARFIQPITR REFIQPITR EEFIQPITY RELIQPITR AELIQPITR ELFDQPITY ELFDQPITF ALAIQPITR RRFIQPITY REAIQPITR ELFPQPITY SRFIQPITL EEFPQPITY SLFIQPITF EEFEQPITY RRFIQPITL RRAIQPITR ELFPQPITL ERFDQPITL EEFEQPITL ERFEQPITY ELFEQPITY SLFIQPITY SRAIQPITR RLLIQPITR EEFDQPITL RRLIQPITR EEFEQPITF REFIQPITL ARFIQPITY ELFEQPITF SRFIQPITF ARFIQPITL RLFIQPITY ALFIQPITF ELFDQPITL SRDIQPITR ARLIQPITR RLFIQPITL AEFIQPITY RRFIQPITF RLFIQPITF SLDIQPITR ERFPQPITF SELIQPITR REDIQPITR ARDIQPITR AEFIQPITF AEAIQPITR SRFIQPITY ERFPQPITL SLAIQPITR AEFIQPITL SEFIQPITF RLDIQPITR ALLIQPITR EEFPQPITL EEFDQPITF ERFDQPITY SRLIQPITR ERFDQPITF ALFIQPITY ERFEQPITF RRDIQPITR SLFIQPITL SLLIQPITR SEFIQPITY ERFEQPITL RLAIQPITR ALFIQPITL REFIQPITF SEFIQPITL ELFPQPITF REFIQPITY SEAIQPITR EEFDQPITY SEDIQPITR EEFPQPITF ERFPQPITY ARFIQPITF ELFEQPITL ARAIQPITR ALDIQPITR AEDIQPITR EEFDQPIAF ARFIQIITF AEAIQPITF ERFPQPISF SRFIQLITF EEFDQPIAY SEFIQIITY AEDIQPITY ALAIQPITY RELIQPITF ERFDQPISL SELIQPITF EEFDQPIAL ELFPQPISY ALLIQPITF ARFIQIITY AELIQPITY RLFIQIITF ARFIQVITL ELFEQPIAF ERFEQPISY ERFPQPIAY RRFIQLITY AEFIQLITL ALAIQPITF EEFPQPIAL AEDIQPITL RLLIQPITF RRLIQPITL SEDIQPITF ERFEQPIAF RLFIQVITL RLFIQIITY EEFEQPIAL SRAIQPITL SRFIQVITL SLDIQPITF REAIQPITF ARDIQPITL RLFIQVITF RLFIQLITL RRFIQIITY RRFIQVITL ARFIQVITY REFIQIITL REDIQPITL ELFEQPIAL ELFDQPISL ERFDQPIAF SRFIQIITL RELIQPITY EEFPQPISY AEAIQPITL ARLIQPITF ERFEQPISF SEDIQPITL SRLIQPITL RLDIQPITY SLAIQPITL ELFPQPIAL SEDIQPITY SEAIQPITY ALDIQPITY ALLIQPITY ELFDQPISY SLFIQIITL SEAIQPITF ALFIQVITY SELIQPITL RRDIQPITL REFIQVITL ALFIQIITL ELFEQPIAY SLFIQLITY RRDIQPITY EEFPQPISF EEFDQPISY SEFIQLITY RLFIQLITF ALFIQIITF AEFIQIITF ERFPQPIAL ELFDQPISF AEFIQIITY RRLIQPITY SLLIQPITF SEFIQVITY ARFIQVITF SEFIQVITL ARAIQPITY ERFDQPISF EEFPQPIAF SLLIQPITL REFIQVITY SRFIQVITF EEFEQPISY ALDIQPITF SLDIQPITL ARAIQPITL RLAIQPITY SRLIQPITY SEAIQPITL SRAIQPITY AELIQPITF ELFDQPIAY REAIQPITY ERFPQPIAF SLFIQVITF RLDIQPITF SLDIQPITY ELFEQPISF AEFIQIITL RELIQPITL ELFPQPISL SRAIQPITF SLAIQPITY ALAIQPITL RRFIQVITY ERFDQPIAY AEAIQPITY ALFIQVITF ARDIQPITF RLFIQIITL AEFIQVITY AEFIQLITF SRDIQPITY ERFPQPISL RRFIQIITL SRDIQPITF ELFPQPIAF EEFPQPIAY SEFIQIITF RRDIQPITF EEFDQPISF SLFIQVITY SEFIQVITF AEDIQPITF SLAIQPITF RLAIQPITL ARLIQPITL RLLIQPITL ARFIQLITY REDIQPITF ELFPQPIAY RRFIQVITF SLFIQLITF EEFEQPIAY RLAIQPITF AEFIQVITF REFIQLITY AEFIQVITL RRFIQIITF RRAIQPITF ERFDQPIAL EEFEQPISF SLLIQPITY SLFIQVITL SLFIQIITY SELIQPITY ELFEQPISY ERFPQPISY RRLIQPITF RLFIQLITY SRFIQIITY ELFPQPISF RLDIQPITL RLFIQVITY AEFIQLITY SEFIQIITL EEFEQPIAF SLFIQIITF ELFEQPISL ALFIQLITF REFIQIITY EEFPQPISL AELIQPITL REAIQPITL REFIQIITF ALDIQPITL ARAIQPITF EEFEQPISL RRFIQLITF RRFIQLITL REFIQLITL EEFDQPISL SLFIQLITL ELFDQPIAF ALFIQIITY RRAIQPITY ERFEQPIAY ARLIQPITY SEFIQLITF SRDIQPITL SRFIQVITY REFIQLITF ARFIQIITL SRLIQPITF ERFDQPISY ARFIQLITL ALLIQPITL ELFDQPIAL ERFEQPISL ALFIQVITL ALFIQLITY ERFEQPIAL ARDIQPITY SRFIQLITY RLLIQPITY ALFIQLITL SRFIQIITF SEFIQLITL SRFIQLITL ARFIQLITF REFIQVITF REDIQPITY RRAIQPITL

No HLA-A\*11:01 with 9, Use the overall attention for pepAAtype-peppsition

# Samples = 346

\*\*\*\*\*\*\*\*\*\* HLA-A\*11:01 | KVYEGVWKK → # Mutation peptides = 345

If you want to use IEDB tools to predict IC50, please use these format:

KVYEGVWKK RVYEGVWKK KVYEGVWKY AVYEGVWKK SVYEGVWKK KVYEGVWKF KVYEGVWKL SEYEGVWKK SVYEGVWKL AEYEGVWKK SRYEGVWKK KVYDGVWKY ARYEGVWKK KVYPGVWKY KEYEGVWKY RVYEGVWKF KRYEGVWKF KRYEGVWKY AVYEGVWKF RRYEGVWKK AVYEGVWKL KVYDGVWKF SVYEGVWKY KVYDGVWKL KVYPGVWKF RVYEGVWKY KVYPGVWKL RVYEGVWKL SLYEGVWKK KEYEGVWKF KLYEGVWKF KRYEGVWKL SVYEGVWKF REYEGVWKK KLYEGVWKY RLYEGVWKK KLYEGVWKL ALYEGVWKK AVYEGVWKY KEYEGVWKL ALAEGVWKK KRYEGVWTF REYEGVWKF KEYEGVWAL RRYEGVWKL RVYDGVWKY ALLEGVWKK REYEGVWKL KRYPGVWKF KRYPGVWKY RRLEGVWKK SVYDGVWKL SRDEGVWKK KLYEGVWAY SLAEGVWKK KLYDGVWKL KEYEGVWSF RLYEGVWKY AEDEGVWKK KLYPGVWKL KLYEGVWSY AEYEGVWKL KEYEGVWTL SLYEGVWKL RRDEGVWKK KEYEGVWAF REYEGVWKY ARYEGVWKF SVYDGVWKY RLDEGVWKK KRYEGVWAL SLYEGVWKF KEYEGVWSY AEAEGVWKK KRYDGVWKF KRYEGVWTL KLYEGVWSL KLYEGVWTL KRYEGVWSL AVYDGVWKF RRYEGVWKF KLYEGVWSF RLLEGVWKK ALDEGVWKK RVYDGVWKL KEYDGVWKL KRYEGVWTY RELEGVWKK AVYDGVWKL SRYEGVWKL KEYDGVWKF KRYPGVWKL KEYEGVWTF KEYEGVWSL KRYDGVWKY SEYEGVWKF KEYDGVWKY KLYEGVWAF KEYPGVWKF ARLEGVWKK ALYEGVWKF KLYEGVWAL SEYEGVWKY AVYPGVWKL RVYPGVWKF ALYEGVWKL RLYEGVWKF SVYPGVWKY ARYEGVWKY REAEGVWKK AELEGVWKK AVYPGVWKF KEYEGVWTY KLYEGVWTY SEDEGVWKK KLYDGVWKF ARDEGVWKK KLYPGVWKY SRLEGVWKK KRYEGVWAF RRYEGVWKY SLLEGVWKK KRYEGVWAY SEAEGVWKK RVYDGVWKF SRAEGVWKK ALYEGVWKY REDEGVWKK KLYEGVWTF KLYPGVWKF KLYDGVWKY SVYPGVWKF SLDEGVWKK ARYEGVWKL SRYEGVWKY RVYPGVWKL RRAEGVWKK KRYEGVWSF SVYDGVWKF AVYDGVWKY KRYDGVWKL KEYPGVWKL RVYPGVWKY KEYPGVWKY RLAEGVWKK SVYPGVWKL SLYEGVWKY KRYEGVWSY AEYEGVWKY SELEGVWKK ARAEGVWKK KEYEGVWAY AVYPGVWKY RLYEGVWKL SEYEGVWKL AEYEGVWKF SRYEGVWKF RRYDGVWKL KEYPGVWAL AEAEGVWKY ALYDGVWKY REDEGVWKL KEYDGVWSY KEYDGVWAL RRLEGVWKL SRAEGVWKF KEYPGVWTL KLYDGVWAY SLLEGVWKF ALYPGVWKF SLAEGVWKY AEYPGVWKL AEYDGVWKY KRYDGVWTY AEYPGVWKF RLYPGVWKL KRYDGVWAF ALYPGVWKY RLAEGVWKL KLYPGVWSL RRLEGVWKY AEDEGVWKF ALDEGVWKL SELEGVWKF SRAEGVWKY SEAEGVWKY SLYPGVWKY KLYPGVWAY RRLEGVWKF KEYDGVWTL RLYDGVWKY SEDEGVWKL ALYPGVWKL SLDEGVWKL RRYPGVWKL KLYDGVWSY KLYPGVWSF AEYPGVWKY KRYDGVWSF SEYDGVWKF SEYPGVWKL KRYPGVWAF RRYPGVWKY RLYPGVWKY SLDEGVWKF REYDGVWKL KEYPGVWTY SLLEGVWKL AELEGVWKY KRYDGVWTL SEDEGVWKF RLDEGVWKL AEDEGVWKL RLLEGVWKF KEYDGVWTF RRYPGVWKF ARDEGVWKY SEAEGVWKF REDEGVWKF ALAEGVWKY KEYDGVWSL ARDEGVWKF ARYPGVWKF SRYDGVWKF REAEGVWKY AEDEGVWKY KEYDGVWTY SLYDGVWKY ALYDGVWKF SEAEGVWKL SRYPGVWKF SRAEGVWKL KEYDGVWAY SRLEGVWKF KEYPGVWSF AEYDGVWKL RRAEGVWKF SEYPGVWKF KLYDGVWTY SLYDGVWKL ARAEGVWKY SRYPGVWKY ARYDGVWKY REYDGVWKF ALDEGVWKY RRAEGVWKY REDEGVWKY KLYDGVWTL SELEGVWKL ALAEGVWKF AEYDGVWKF ALLEGVWKF RRDEGVWKY SEYPGVWKY KLYPGVWTF KEYPGVWAF KLYDGVWTF ARLEGVWKY ARYDGVWKL ARYDGVWKF SLAEGVWKF ALYDGVWKL SRLEGVWKL KRYPGVWTF RLDEGVWKF RLAEGVWKF SLDEGVWKY KLYDGVWSF REAEGVWKF SEYDGVWKL ARAEGVWKF KLYDGVWSL ARDEGVWKL REYPGVWKF ARLEGVWKF SLAEGVWKL ALLEGVWKY ARYPGVWKY KEYDGVWAF RLDEGVWKY KRYPGVWSY RELEGVWKL RLLEGVWKL KRYPGVWSL AEAEGVWKF SEDEGVWKY KRYPGVWTY SLLEGVWKY AELEGVWKF KRYPGVWAL RLYDGVWKF SRLEGVWKY KRYDGVWSL SLYPGVWKF KLYPGVWSY REYPGVWKY KEYPGVWSL KLYDGVWAF RRAEGVWKL KLYPGVWTY SRYDGVWKY RLYDGVWKL SRYPGVWKL ALAEGVWKL KRYPGVWSF RRYDGVWKF RRYDGVWKY RLLEGVWKY REYPGVWKL KEYPGVWTF KLYPGVWAL ARLEGVWKL SRDEGVWKF RLAEGVWKY KLYPGVWTL KRYDGVWSY SRDEGVWKY REYDGVWKY RELEGVWKF KEYDGVWSF KLYDGVWAL KRYPGVWAY ARYPGVWKL RRDEGVWKL ALDEGVWKF ALLEGVWKL KRYDGVWAL SRYDGVWKL KRYDGVWAY SLYDGVWKF REAEGVWKL KRYDGVWTF KEYPGVWAY ARAEGVWKL SLYPGVWKL KRYPGVWTL AEAEGVWKL RELEGVWKY SELEGVWKY SEYDGVWKY KLYPGVWAF SRDEGVWKL RLYPGVWKF AELEGVWKL RRDEGVWKF KEYPGVWSY

No HLA-A\*68:01 with 11, Use the overall attention for pepAAtype-peppsition

# Samples = 297

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | SELFRSGLDSY → # Mutation peptides = 296

If you want to use IEDB tools to predict IC50, please use these format:

SELFRSGLDSY SRLFRSGLDSY SELDRSGLDSY SELPRSGLDSY SEFFRSGLDSY SELFRSGLLSY SELFRSGLSSY SELFRSGLDSF SELFRSGLVSY SELFRSGLDSL AELFRSGLDSY RELFRSGLDSY SLLFRSGLDSY SELERSGLDSY SEIFRSGLDSY RLLFRSGLDSY SLLFRSGLDSL SLIFRSGLDSY SLLFRSGLLSY SRLFRSGLDSF SELERSGLDSF SEFPRSGLDSY RELDRSGLDSY AELERSGLDSY SELDRSGLDSF SEIPRSGLDSY RELFRSGLVSY SLFFRSGLDSY SRLFRSGLDSL SRFFRSGLDSY REIFRSGLDSY SELERSGLDSL SELFRSLLLSY SLLDRSGLDSY RRLFRSGLDSY AELFRSGLLSY SLLPRSGLDSY SEFDRSGLDSY SLLERSGLDSY SEIFRSGLDSL AELFRSGLDSL RELFRSGLSSY SRLFRSGLVSY RELFRSGLDSL SEFFRSGLDSF AELFRSGLDSF SLLFRSGLVSY SELPRSGLDSF SELFRSSLLSY SELFRSSLVSY RELERSGLDSY SRLFRSGLSSY SEFERSGLDSY AELDRSGLDSY SRLFRSGLLSY ARLFRSGLDSY SEIERSGLDSY SRIFRSGLDSY AELFRSGLVSY SEFFRSGLDSL SRLPRSGLDSY SELFRSSLSSY SELPRSGLDSL AEFFRSGLDSY AELPRSGLDSY RELPRSGLDSY SELDRSGLDSL RELFRSGLDSF SRLERSGLDSY SLLFRSGLDSF REFFRSGLDSY RELFRSGLLSY SRLDRSGLDSY SELFRSLLSSY AEIFRSGLDSY SEIDRSGLDSY SLLFRSGLSSY SELFRSLLVSY AELFRSGLSSY SEIFRSGLDSF ALLFRSGLDSY ALLERSGLDSY AEFFRSGLDSL RELDRSGLDSF RELFRSLLSSY SEIPRSGLDSL SLFDRSGLDSY SEIDRSGLDSF AELFRSLLLSY ARLERSGLDSY REFFRSGLDSF ARFFRSGLDSY RLLFRSGLSSY RLLFRSGLLSY AEFFRSGLDSF RRLERSGLDSY RLLFRSGLDSF AEIFRSGLDSF SRIFRSGLDSF RLLDRSGLDSY SEFPRSGLDSL AELERSGLDSL ALLFRSGLVSY AELFRSSLSSY SLLDRSGLDSF RELFRSLLVSY SLIFRSGLDSL SEFPRSGLDSF ALLDRSGLDSY REFFRSGLDSL ARLPRSGLDSY SRFERSGLDSY RRLDRSGLDSY AELDRSGLDSL AELFRSLLVSY RRFFRSGLDSY AELPRSGLDSF SRLPRSGLDSF SRLFRSLLSSY RLLPRSGLDSY SLFERSGLDSY ARLFRSGLDSF ALLFRSGLDSL AEIFRSGLDSL ALLFRSGLSSY SRIDRSGLDSY SLIFRSGLDSF SLFPRSGLDSY SLIERSGLDSY RRIFRSGLDSY SLLPRSGLDSF SRLDRSGLDSF SRLFRSSLLSY RRLFRSGLDSF SRLFRSLLVSY SRFPRSGLDSY SLFFRSGLDSF ARLFRSGLDSL RLLFRSGLDSL SEIDRSGLDSL AELPRSGLDSL RELFRSSLSSY ALLFRSGLLSY SLIPRSGLDSY SEFDRSGLDSF SRIERSGLDSY RELFRSSLVSY ALIFRSGLDSY RELDRSGLDSL SLLFRSSLSSY RRLFRSGLLSY ALFFRSGLDSY SRLFRSSLSSY RRLFRSGLDSL SLLFRSLLVSY SRLDRSGLDSL SRLERSGLDSF RRLFRSGLSSY REIFRSGLDSL SEFERSGLDSF SRIPRSGLDSY ARLFRSGLSSY SLLFRSLLSSY SLLFRSLLLSY SRIFRSGLDSL RLIFRSGLDSY RRLFRSGLVSY RLLFRSGLVSY RELFRSLLLSY AELDRSGLDSF ALLFRSGLDSF SRLFRSLLLSY SLLDRSGLDSL SRLERSGLDSL RELERSGLDSF SRLPRSGLDSL RELFRSSLLSY SRFFRSGLDSF RRLPRSGLDSY SLLERSGLDSL SEFERSGLDSL AELFRSLLSSY SLLERSGLDSF SEIERSGLDSL ARLFRSGLVSY RELPRSGLDSF SLLFRSSLLSY SEFDRSGLDSL SEIERSGLDSF SRFDRSGLDSY SRFFRSGLDSL SRLFRSSLVSY SLLPRSGLDSL AELFRSSLLSY AELFRSSLVSY SLIDRSGLDSY RLFFRSGLDSY RLLERSGLDSY RELPRSGLDSL ALLPRSGLDSY ARLFRSGLLSY ARLDRSGLDSY SEIPRSGLDSF RELERSGLDSL SLFFRSGLDSL ARIFRSGLDSY SLLFRSSLVSY REIFRSGLDSF AELERSGLDSF RRIFRSGLDSL RRFFRSGLDSL RLLDRSGLDSL RLLPRSGLDSL SRIPRSGLDSF RRLDRSGLDSF RLIFRSGLDSF ARLFRSLLSSY ALLERSGLDSL ALLFRSLLSSY ALLPRSGLDSF ARLFRSSLVSY RLFFRSGLDSF RRLDRSGLDSL RRLFRSLLSSY SRIERSGLDSL ARLPRSGLDSL RRLERSGLDSL RLLFRSSLSSY ARLERSGLDSL ALLDRSGLDSL RLFFRSGLDSL ARLFRSLLLSY RRLFRSLLLSY SRIPRSGLDSL SLIERSGLDSL ARLDRSGLDSF SRFDRSGLDSL RRLERSGLDSF SRFPRSGLDSL ARLFRSLLVSY RRFFRSGLDSF RLLPRSGLDSF SLFPRSGLDSL SRIERSGLDSF ARFFRSGLDSF RLLDRSGLDSF SLIPRSGLDSF ARIFRSGLDSL ARLFRSSLSSY ALLFRSSLLSY RRIFRSGLDSF RRLPRSGLDSF SLFDRSGLDSF SRFPRSGLDSF SLIERSGLDSF RRLFRSSLSSY RLLFRSLLVSY ALLPRSGLDSL RLLERSGLDSL SLFERSGLDSL SRFERSGLDSF ARIFRSGLDSF RRLFRSSLVSY RLLFRSSLVSY ALLFRSSLSSY RLLFRSLLSSY RLLFRSSLLSY ARFFRSGLDSL ALIFRSGLDSF SLFERSGLDSF ARLFRSSLLSY ALLFRSSLVSY SRFDRSGLDSF ARLPRSGLDSF RRLFRSLLVSY SLFDRSGLDSL SRIDRSGLDSF SLIDRSGLDSF SLFPRSGLDSF ALLERSGLDSF ALFFRSGLDSL RRLPRSGLDSL SLIDRSGLDSL RLLERSGLDSF SLIPRSGLDSL ARLERSGLDSF ALLDRSGLDSF ARLDRSGLDSL SRFERSGLDSL ALLFRSLLLSY ALIFRSGLDSL RLLFRSLLLSY ALLFRSLLVSY RRLFRSSLLSY ALFFRSGLDSF SRIDRSGLDSL RLIFRSGLDSL

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 225

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | SELFRSGLDS → # Mutation peptides = 224

If you want to use IEDB tools to predict IC50, please use these format:

SELFRSGLDS RELFRSGLDS SELFRSGLLS SRLFRSGLDS SELFRSGLDF SELFRSGLTS SLLFRSGLDS SELFRSGLSS SELFRSGLDL AELFRSGLDS SELFRSGLDY SEFFRSGLDL AELFRSGLLS RELFRSGLTS ARLFRSGLDS RRLFRSGLDS SLLFRSGLDY SEFFRSGLDF SELFRSGVDY ALLFRSGLDS SEIFRSGLTS SRLFRSGLDY SEFFRSGLLS SELFRSGVDF SLLFRSGLSS SRLFRSGLSS AELFRSGLDL SEIFRSGLDF SLLFRSGLLS SEFFRSGLSS RELFRSGLSS SELFRSGIDY SEIFRSGLDY AELFRSGLSS RLLFRSGLDS RELFRSGLLS SRLFRSGLDF SRLFRSGLLS AELFRSGLTS SELFRSGIDF SEFFRSGLTS SELFRSGIDL SRLFRSGLDL SLLFRSGLDF SEFFRSGLDY RELFRSGLDY SEIFRSGLSS RELFRSGLDL SEIFRSGLDL SLLFRSGLDL SRLFRSGLTS AELFRSGLDF RELFRSGLDF SLLFRSGLTS AELFRSGLDY SEIFRSGLLS SELFRSGVDL REIFRSGLLS SRIFRSGLTS SLFFRSGLLS REFFRSGLDL REFFRSGLDY ALLFRSGLTS SEIFRSGIDY RRLFRSGLDL SRLFRSGVDL REIFRSGLSS SEFFRSGVDL SEFFRSGIDY AEFFRSGLSS AEFFRSGLTS REIFRSGLDY RRLFRSGLTS SLLFRSGIDY SLLFRSGIDF SLIFRSGLTS AEFFRSGLDL SEIFRSGVDL ALLFRSGLDL RRLFRSGLDF ARLFRSGLDF RLLFRSGLTS SLFFRSGLDY ARLFRSGLLS RLLFRSGLDF SLIFRSGLLS SEIFRSGIDF ALLFRSGLDF SLIFRSGLSS AEFFRSGLDF RLLFRSGLSS SRFFRSGLDF REFFRSGLTS AEIFRSGLDY AEFFRSGLLS RRLFRSGLDY SLFFRSGLSS SRLFRSGIDF SRIFRSGLSS SLIFRSGLDL REFFRSGLDF SRIFRSGLDL SRLFRSGVDF SRFFRSGLSS AEIFRSGLTS SRIFRSGLDF SRLFRSGIDY SRFFRSGLTS AEIFRSGLLS SEIFRSGIDL SRIFRSGLDY AEFFRSGLDY RLLFRSGLLS SEFFRSGIDL SRFFRSGLDY SEFFRSGVDY SLLFRSGIDL RLLFRSGLDL RLLFRSGLDY ARLFRSGLSS ARLFRSGLTS RRLFRSGLSS SEFFRSGIDF REFFRSGLSS SLIFRSGLDY REIFRSGLDL AEIFRSGLDL SRIFRSGLLS ALLFRSGLDY SLFFRSGLDL SEIFRSGVDY SLIFRSGLDF SLFFRSGLDF SRLFRSGIDL SRLFRSGVDY SEIFRSGVDF RRLFRSGLLS SRFFRSGLLS SLFFRSGLTS REIFRSGLDF ALLFRSGLLS SLLFRSGVDY SLLFRSGVDF REIFRSGLTS AEIFRSGLDF ARLFRSGLDL ARLFRSGLDY AEIFRSGLSS SEFFRSGVDF ALLFRSGLSS SRFFRSGLDL REFFRSGLLS SLLFRSGVDL SLFFRSGIDL ALFFRSGLDY ARIFRSGLLS SRFFRSGVDY SRIFRSGVDF SRIFRSGVDL SLFFRSGIDF RRIFRSGLTS RLFFRSGLLS SLIFRSGVDF ALFFRSGLTS SRFFRSGIDY SLFFRSGIDY ARFFRSGLSS ALIFRSGLLS ARFFRSGLTS SLIFRSGIDL RRFFRSGLSS SRFFRSGIDF RRFFRSGLDL RLIFRSGLLS RLIFRSGLTS RRFFRSGLTS RLFFRSGLSS SLIFRSGVDL RLFFRSGLDY SRIFRSGVDY RLFFRSGLDF RRIFRSGLLS ALIFRSGLTS RRIFRSGLSS ARIFRSGLSS ARIFRSGLDF RLFFRSGLTS SRFFRSGVDL ARIFRSGLTS SLFFRSGVDF SLIFRSGIDY SLIFRSGVDY ARIFRSGLDY RLIFRSGLDF ALFFRSGLDF RRIFRSGLDY ALIFRSGLDL RRIFRSGLDF SRFFRSGVDF RRFFRSGLDY ARFFRSGLDL ALIFRSGLSS ALIFRSGLDF ALIFRSGLDY SLIFRSGIDF ALFFRSGLLS SRIFRSGIDF ARFFRSGLLS ARFFRSGLDY ALFFRSGLDL RLIFRSGLDY ARIFRSGLDL RLFFRSGLDL SLFFRSGVDL SRIFRSGIDL SRFFRSGIDL ALFFRSGLSS ARFFRSGLDF RRFFRSGLDF RLIFRSGLSS RLIFRSGLDL SLFFRSGVDY RRFFRSGLLS RRIFRSGLDL SRIFRSGIDY

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 297

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | ELFRSGLDSY → # Mutation peptides = 296

If you want to use IEDB tools to predict IC50, please use these format:

ELFRSGLDSY EEFRSGLDSY ELFRSGLLSY ELIRSGLDSY ELLRSGLDSY ELFRSGLVSY RLFRSGLDSY SLFRSGLDSY ELFRSGLDSL ELFRSGLDTY ERFRSGLDSY ELFRSGLISY ALFRSGLDSY ELFRSGLDLY ELFRSGLDSF SLFRSGLDTY ERFRSGLVSY REFRSGLDSY ELFRSGLDLF ELLRSGLDSL ELFRSGLDLL ALFRSGLDLY RLFRSGLDSL SLFRSGLDSL ELLRSGLISY RLFRSGLDTY ELFRSGLLSL ARFRSGLDSY ELIRSGLVSY RLFRSGLDLY SRFRSGLDSY SLFRSGLDLY ELLRSGLDLY ERFRSGLISY RLIRSGLDSY ELLRSGLLSY ELIRSGLDLY EEFRSGLDLY ALLRSGLDSY ELIRSGLDSF ERIRSGLDSY ELFRSGLDTF ELFRSGLISF ERLRSGLDSY EEFRSGLDSF ELFRSGLLSF ERFRSGLDLY ELIRSGLDSL ELFRSGLVSL SLIRSGLDSY RRFRSGLDSY ELIRSGLDTY ERFRSGLDTY AEFRSGLDSY ELLRSGLVSY ELFRSGLISL RLLRSGLDSY EEIRSGLDSY ELLRSGLDSF ELFRSGLDTL EEFRSGLDTY EEFRSGLISY ALFRSGLDSL ELFRSGLVSF EEFRSGLLSY SEFRSGLDSY EEFRSGLVSY SLLRSGLDSY ERFRSGLDSL RLFRSGLDSF ALFRSGLDSF EELRSGLDSY ELIRSGLISY ELLRSGLDTY ERFRSGLLSY ALIRSGLDSY ELIRSGLLSY SLFRSGLDSF ERFRSGLDSF ALFRSGLDTY EEFRSGLDSL RLIRSGLDSF RLIRSGLDSL ERIRSGLDSL ARIRSGLDSY ELIRSGLISL SEFRSGLDSF ELLRSGLDTL SEFRSGLDTY RRFRSGLDLY ELIRSGLVSF ERIRSGLDSF ARFRSGLDSL SLLRSGLDSF EEFRSGLLSL EEIRSGLVSY REFRSGLDSL ERFRSGLDLL REFRSGLDSF EELRSGLDLY AEFRSGLDLY EELRSGLLSY EEFRSGLDLL ERIRSGLDTY EEFRSGLLSF ERLRSGLVSY SLIRSGLDTY ELLRSGLDLL EELRSGLISY SLLRSGLDSL ELLRSGLISL EEIRSGLDLY RRIRSGLDSY AEFRSGLDTY ERLRSGLLSY ERIRSGLISY RLLRSGLDLY EELRSGLDSF RLLRSGLDSL ELIRSGLLSF REFRSGLDTY ALLRSGLDLY EEFRSGLVSF ELLRSGLDTF ELLRSGLLSF EEFRSGLDTF RLIRSGLDTY RRFRSGLDSL ERIRSGLDLY ELIRSGLISF ALIRSGLDTY SRFRSGLDSL EEIRSGLDSL EELRSGLDSL AEIRSGLDSY EEFRSGLISF ELLRSGLDLF SRIRSGLDSY SRLRSGLDSY SLIRSGLDSL SEIRSGLDSY ERFRSGLLSF EEFRSGLDLF RRLRSGLDSY EELRSGLDTY ALLRSGLDTY ERIRSGLLSY EEIRSGLDSF AEFRSGLDSF ELIRSGLDLL SRFRSGLDLY SLLRSGLDLY EEIRSGLLSY ELIRSGLLSL RRFRSGLDSF EEIRSGLDTY ERFRSGLVSF EELRSGLVSY ELIRSGLVSL ERFRSGLDTF ERFRSGLDTL ELIRSGLDTL ALLRSGLDSF ALIRSGLDSL EEFRSGLDTL ELLRSGLVSF SLLRSGLDTY RLLRSGLDTY ALIRSGLDSF ALIRSGLDLY SEFRSGLDSL ARFRSGLDLY ARLRSGLDSY RRFRSGLDTY ERFRSGLDLF ARFRSGLDTY SRFRSGLDTY ERFRSGLISL ERLRSGLISY ELLRSGLLSL EEFRSGLVSL ERLRSGLDSF ERFRSGLVSL AEFRSGLDSL RLLRSGLDSF ERFRSGLLSL ELLRSGLVSL AELRSGLDSY SRFRSGLDSF SEFRSGLDLY ALLRSGLDSL ELIRSGLDLF ELIRSGLDTF EEIRSGLISY RLIRSGLDLY REFRSGLDLY ERLRSGLDSL ERLRSGLDLY REIRSGLDSY ERFRSGLISF SLIRSGLDSF ERLRSGLDTY SLIRSGLDLY SELRSGLDSY ERIRSGLVSY EEFRSGLISL ELLRSGLISF RELRSGLDSY ARFRSGLDSF AELRSGLDLY EEIRSGLLSL AEIRSGLDLY EEIRSGLDTF EEIRSGLDTL RRLRSGLDSL EELRSGLDLF AEIRSGLDSF ERIRSGLDLL ERLRSGLVSL SELRSGLDLY ERIRSGLISL SEIRSGLDTY ERIRSGLVSL RELRSGLDTY SELRSGLDSF RRIRSGLDTY ERLRSGLISL ERIRSGLDLF ERIRSGLVSF SEIRSGLDSF RRIRSGLDLY SRIRSGLDTY ERLRSGLLSL EELRSGLDTF ERIRSGLLSL RELRSGLDLY REIRSGLDSL RRIRSGLDSL ARIRSGLDSF SRIRSGLDSL ARLRSGLDSF EEIRSGLDLL SRIRSGLDLY AEIRSGLDTY SELRSGLDTY EEIRSGLISL EELRSGLVSL EEIRSGLDLF ARLRSGLDTY ARLRSGLDSL AELRSGLDSL ERLRSGLLSF SRLRSGLDSF RELRSGLDSF SRLRSGLDSL SEIRSGLDSL SELRSGLDSL ARLRSGLDLY RRLRSGLDLY REIRSGLDLY ERLRSGLDTF ERIRSGLLSF AELRSGLDSF ERLRSGLDLL EEIRSGLISF EELRSGLVSF AELRSGLDTY RRLRSGLDTY ERLRSGLISF ERIRSGLISF SRLRSGLDTY REIRSGLDSF RELRSGLDSL ERIRSGLDTF RRIRSGLDSF ERLRSGLDLF ERIRSGLDTL ERLRSGLDTL EELRSGLLSF ERLRSGLVSF AEIRSGLDSL ARIRSGLDLY EELRSGLDLL ARIRSGLDTY EELRSGLDTL SRLRSGLDLY EEIRSGLLSF EEIRSGLVSL RRLRSGLDSF EEIRSGLVSF EELRSGLISF ARIRSGLDSL SEIRSGLDLY SRIRSGLDSF EELRSGLLSL EELRSGLISL REIRSGLDTY

No HLA-A\*68:01 with 9, Use the overall attention for pepAAtype-peppsition

# Samples = 343

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | FRSGLDSYV → # Mutation peptides = 342

If you want to use IEDB tools to predict IC50, please use these format:

FRSGLDSYV ARSGLDSYV FRSGLDSYL SRSGLDSYV FRSGLDSYF RRSGLDSYV FRSGLDSYY SRSGLDSYL FRSDLDSYF FRSPLDSYL RRSGLDSYL FLSGLDSYY FLSGLDSYL RRSGLDSYF SRLGLDSYV SRSGLDSYY FRSPLDSYY FRSELDSYY RRAGLDSYV ARLGLDSYV FLSGLDSYF RESGLDSYV RRDGLDSYV ARSGLDSYL SESGLDSYV FESGLDSYL SRDGLDSYV ALSGLDSYV ARSGLDSYY ARAGLDSYV FESGLDSYY FRSPLDSYF RLSGLDSYV SLSGLDSYV FESGLDSYF AESGLDSYV ARDGLDSYV FRSDLDSYL ARSGLDSYF FRSELDSYL FRSDLDSYY RRSGLDSYY FRSELDSYF RRLGLDSYV SRSGLDSYF SRAGLDSYV FLSELDSYY ALLGLDSYV FRSPLDSAL RRLGLDSYY RLAGLDSYV ALSGLDSYY SEDGLDSYV SLSGLDSYL SRLGLDSYF RRSPLDSYL FRSPLDSAY ARSELDSYL ARDGLDSYF RRSDLDSYY FESPLDSYL FRSDLDSTL FESDLDSYY FRSDLDSTF SRSDLDSYL ALAGLDSYV AESGLDSYL FRSELDSAF ALSGLDSYL FRSELDSAY FRSELDSTL FRSELDSSL RRSPLDSYY SRDGLDSYL FLSDLDSYY FRSPLDSSF ALDGLDSYV REAGLDSYV FRSDLDSAY RRSELDSYF SRSPLDSYY AESGLDSYF AESGLDSYY SRAGLDSYL REDGLDSYV FRSPLDSAF SESGLDSYY FRSELDSTF ARSDLDSYL AEAGLDSYV SRSDLDSYY FRSPLDSSY ARLGLDSYY FRSDLDSAL ARSELDSYF ARSDLDSYY RRSPLDSYF FRSELDSSY SLSGLDSYY RELGLDSYV SRSELDSYL ARAGLDSYL ARLGLDSYF SRSPLDSYL RRSELDSYY SRDGLDSYY ARSDLDSYF SRSPLDSYF SLDGLDSYV RRDGLDSYY RESGLDSYL RRDGLDSYL RLLGLDSYV SLSGLDSYF ARLGLDSYL RESGLDSYF AELGLDSYV FESPLDSYF ARAGLDSYF FRSELDSTY FRSPLDSSL FRSPLDSTY SEAGLDSYV FRSDLDSSF RESGLDSYY RRSDLDSYL RRSDLDSYF RRSELDSYL RRAGLDSYY RLSGLDSYF FRSELDSSF SRSELDSYY SRAGLDSYY ARDGLDSYL SRAGLDSYF FESELDSYY SRSDLDSYF ARDGLDSYY FRSDLDSAF RLSGLDSYL FESDLDSYF ALSGLDSYF SRLGLDSYL ARSPLDSYL FRSPLDSTL FRSDLDSSY FESELDSYF FLSPLDSYF FRSELDSAL FLSPLDSYL SLLGLDSYV FRSDLDSSL RRAGLDSYL RRDGLDSYF SLAGLDSYV RRAGLDSYF FESELDSYL FRSDLDSTY SRLGLDSYY ARSPLDSYY FLSELDSYF FLSDLDSYF FESDLDSYL SELGLDSYV RLDGLDSYV ARAGLDSYY SESGLDSYL SRSELDSYF FESPLDSYY RLSGLDSYY FLSDLDSYL AEDGLDSYV ARSELDSYY ARSPLDSYF FLSPLDSYY RRLGLDSYL FRSPLDSTF SRDGLDSYF SESGLDSYF RRLGLDSYF FLSELDSYL AELGLDSYF RELGLDSYF FESPLDSAF ALSDLDSYY RLDGLDSYL RESPLDSYF AESPLDSYL ALSPLDSYL AELGLDSYY FESELDSSL RESPLDSYL FESELDSAL RELGLDSYL RLSELDSYY FESDLDSAF ALLGLDSYF RESELDSYY FLSPLDSAY FLSDLDSSF SLSDLDSYL FLSPLDSSL SLSPLDSYL FLSPLDSSY FLSPLDSTY REDGLDSYY AESDLDSYL RESELDSYF FLSDLDSTY FLSPLDSTF SLAGLDSYY RLSPLDSYY SLLGLDSYY ALSPLDSYF SLAGLDSYL SEDGLDSYY AELGLDSYL ALSELDSYL SEAGLDSYF FESPLDSSL AESELDSYY RLLGLDSYF REAGLDSYL SESDLDSYL RLSELDSYL FLSDLDSSY SESELDSYY ALAGLDSYL FLSELDSSF SLSELDSYL ALDGLDSYF FLSPLDSTL RESDLDSYL RESDLDSYY SLLGLDSYF SESDLDSYF ALSELDSYY FLSPLDSAL RLSELDSYF FESELDSAY FESELDSTF FESELDSTL FLSPLDSSF SLSPLDSYY FLSDLDSAF RLLGLDSYY SESPLDSYF AESPLDSYF SLSDLDSYF SLAGLDSYF FLSPLDSAF AEDGLDSYF SESPLDSYY RELGLDSYY AEDGLDSYY REDGLDSYL ALSDLDSYF FLSDLDSTF RLAGLDSYL FESPLDSAY FLSELDSAL FESPLDSTF SELGLDSYY ALAGLDSYF SEDGLDSYL RLAGLDSYF AEAGLDSYY SESELDSYF SLDGLDSYF FLSELDSTY RLSPLDSYF FLSDLDSAL FESDLDSSF RLLGLDSYL FESDLDSSY ALDGLDSYL AEAGLDSYF REDGLDSYF SEDGLDSYF SLSDLDSYY FESPLDSSF FESPLDSSY AEAGLDSYL FESDLDSAL SLSELDSYF RESELDSYL FLSDLDSAY AESELDSYF FESDLDSAY SELGLDSYF FLSELDSTL SLSELDSYY AESELDSYL FESPLDSTL AEDGLDSYL FLSDLDSSL FESDLDSTF ALAGLDSYY RLDGLDSYY FESPLDSTY REAGLDSYY SESPLDSYL FLSELDSAY FLSDLDSTL RESDLDSYF FESDLDSTY FESPLDSAL RLAGLDSYY ALSDLDSYL FESELDSTY RLSPLDSYL SESELDSYL REAGLDSYF FLSELDSSL SEAGLDSYY SELGLDSYL SLSPLDSYF RLDGLDSYF FESELDSSY AESDLDSYF FESELDSAF ALSPLDSYY ALLGLDSYL FLSELDSSY RLSDLDSYL AESDLDSYY ALDGLDSYY FLSELDSAF ALLGLDSYY SLDGLDSYY RLSDLDSYY FESELDSSF SEAGLDSYL SLDGLDSYL RLSDLDSYF FESDLDSSL FLSELDSTF FESDLDSTL SLLGLDSYL RESPLDSYY SESDLDSYY ALSELDSYF AESPLDSYY

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 321

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | PSDTRQMLFY → # Mutation peptides = 320

If you want to use IEDB tools to predict IC50, please use these format:

PSDTRQMLFY PEDTRQMLFY PLDTRQMLFY PRDTRQMLFY PSDTRQMLFF PSDTRQMLFL ASDTRQMLFY RSDTRQMLFY SSDTRQMLFY ALDTRQMLFY PRDTRQMLTY AEDTRQMLFY PRLTRQMLFY PLDTRQMLFL PLDTRQMLLY SRDTRQMLFY RLDTRQMLFY PEDTRQMLTY PRFTRQMLFY PRDTRQMLLY RRDTRQMLFY PRDTRQMLFF PEDTRQMLFF PRDTRQMLSY PEDTRQMLLY PLITRQMLFY PEITRQMLFY PLDTRQMLFF PLLTRQMLFY PLDTRQMLSY PRITRQMLFY PLDTRQMLTY REDTRQMLFY PEDTRQMLFL SEDTRQMLFY PEFTRQMLFY PEDTRQMLSY PLFTRQMLFY ARDTRQMLFY PRDTRQMLFL PELTRQMLFY SLDTRQMLFY PRFTRQMLFL PLITRQMLFF SLDTRQMLFL SLDTRQMLFF RLDTRQMLTY REDTRQMLFF PRITRQMLFL PEITRQMLFL SRLTRQMLFY PEFTRQMIFY ARDTRQMLFL PLLTRQMLFL PEFTRQMLFF SLDTRQMLLY PRLTRQMVFY SRDTRQMLTY PRFTRQMLFF PLLTRQMIFY ARDTRQMLFF PLFTRQMLFF ALDTRQMLFF RLDTRQMLSY REDTRQMLSY RELTRQMLFY SLFTRQMLFY ARITRQMLFY SEDTRQMLLY PRITRQMLFF ALFTRQMLFY ARFTRQMLFY PELTRQMLFF SLDTRQMLSY ALDTRQMLTY RLLTRQMLFY ALITRQMLFY PEFTRQMLFL RRDTRQMLFL REFTRQMLFY PEITRQMLFF PLLTRQMLFF PLITRQMIFY SRDTRQMLSY SEDTRQMLSY RLITRQMLFY REDTRQMLTY SEITRQMLFY PLFTRQMVFY PRFTRQMVFY PEFTRQMVFY RRITRQMLFY ALDTRQMLFL SEDTRQMLFF AEFTRQMLFY RRLTRQMLFY PLITRQMVFY SEFTRQMLFY AELTRQMLFY AEITRQMLFY RRDTRQMLSY SRDTRQMLFL SEDTRQMLFL REDTRQMLLY RLDTRQMLLY PLFTRQMLFL ALDTRQMLSY PRFTRQMIFY RRDTRQMLTY ARDTRQMLTY RRDTRQMLFF ALLTRQMLFY RLFTRQMLFY REITRQMLFY PELTRQMVFY PEITRQMIFY PLLTRQMVFY PLITRQMLFL SEDTRQMLTY PLFTRQMIFY PRITRQMVFY PRLTRQMLFL AEDTRQMLSY PELTRQMIFY SLLTRQMLFY AEDTRQMLTY PRITRQMIFY SRDTRQMLFF RRDTRQMLLY REDTRQMLFL ARLTRQMLFY PRLTRQMIFY AEDTRQMLFL PEITRQMVFY SRFTRQMLFY ARDTRQMLSY PELTRQMLFL AEDTRQMLFF SLITRQMLFY AEDTRQMLLY SLDTRQMLTY RRFTRQMLFY SRDTRQMLLY SELTRQMLFY RLDTRQMLFL ALDTRQMLLY PRLTRQMLFF ARDTRQMLLY SRITRQMLFY RLDTRQMLFF REDDRQMLLY AEDERQMLLY ARLTRQMLFF RLFTRQMLFF PRITRQMIFF SRITRQMLFF PEITRQMIFL ALDDRQMLTY RRFTRQMLFF PLLTRQMVFF REDDRQMLTY PLLTRQMIFF SEDDRQMLLY RLDDRQMLLY SEDERQMLSY PRLTRQMIFF SLDPRQMLTY SRDERQMLTY RLDPRQMLLY PRITRQMIFL SRDPRQMLLY SLDERQMLSY RLLTRQMLFF AEDERQMLTY SLDPRQMLLY ALLTRQMLFF ALDERQMLTY AEFTRQMLFL ALDPRQMLSY SRDPRQMLTY SRDERQMLSY RRDDRQMLLY PEITRQMVFL REDERQMLLY SLLTRQMLFF RLDERQMLLY PLITRQMIFF REDPRQMLSY PELTRQMVFL RLDPRQMLTY REDPRQMLLY SEDERQMLTY RRITRQMLFL RRLTRQMLFF RELTRQMLFL RRITRQMLFF AEDPRQMLLY PEFTRQMIFL PEITRQMVFF ARDDRQMLTY PRLTRQMIFL REFTRQMLFF AEFTRQMLFF SEFTRQMLFL SRLTRQMLFL SLITRQMLFF ALITRQMLFF RLITRQMLFF SRDDRQMLSY PRLTRQMVFL PLLTRQMVFL RLDPRQMLSY REITRQMLFL ARFTRQMLFF SLDDRQMLLY AEDERQMLSY ARDPRQMLSY AEDPRQMLTY SLDERQMLTY PRFTRQMVFF AEDDRQMLTY SRDDRQMLTY SEITRQMLFL ARITRQMLFL PELTRQMVFF PLFTRQMVFL ALDPRQMLLY PLITRQMVFL PLFTRQMIFF RLFTRQMLFL SLDERQMLLY PEFTRQMIFF AEDDRQMLSY ARLTRQMLFL ARDDRQMLLY AEITRQMLFF AEITRQMLFL REDDRQMLSY AEDDRQMLLY SRFTRQMLFL PRFTRQMIFF RLDERQMLTY SEITRQMLFF SEDDRQMLSY RLITRQMLFL PRFTRQMIFL RELTRQMLFF RLLTRQMLFL SLDDRQMLTY ARITRQMLFF SEDERQMLLY RLDERQMLSY PRLTRQMVFF ALDDRQMLSY RRDERQMLTY RRDDRQMLSY SLDDRQMLSY ARDPRQMLTY REDERQMLTY SELTRQMLFF SRDDRQMLLY SRDERQMLLY PRITRQMVFL REDPRQMLTY SLLTRQMLFL ALFTRQMLFL RLDDRQMLSY SELTRQMLFL PELTRQMIFL PRFTRQMVFL PELTRQMIFF REITRQMLFF RRDPRQMLLY REFTRQMLFL SLFTRQMLFL REDERQMLSY SLFTRQMLFF PRITRQMVFF AELTRQMLFL PLLTRQMIFL ARDERQMLSY SRITRQMLFL AEDPRQMLSY ALFTRQMLFF SEDPRQMLLY PLFTRQMIFL SRFTRQMLFF ARDPRQMLLY ALITRQMLFL SEDPRQMLSY ARDDRQMLSY ARFTRQMLFL SEDPRQMLTY RRDDRQMLTY SRLTRQMLFF RRDPRQMLTY RRDERQMLLY RRDPRQMLSY ALDERQMLLY RRFTRQMLFL PLITRQMIFL SLDPRQMLSY RRLTRQMLFL AELTRQMLFF PLITRQMVFF PEFTRQMVFL PEFTRQMVFF SRDPRQMLSY PEITRQMIFF PLFTRQMVFF ALDERQMLSY ARDERQMLLY ALDPRQMLTY ARDERQMLTY SEDDRQMLTY ALDDRQMLLY RRDERQMLSY SEFTRQMLFF ALLTRQMLFL SLITRQMLFL RLDDRQMLTY

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>pip install model

Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple, https://pypi.ngc.nvidia.com

ERROR: Could not find a version that satisfies the requirement model (from versions: none)

ERROR: No matching distribution found for model

(sandianqi) D:\TransPHLA-AOMP-master\TransPHLA-AOMP>python pHLAIformer.py --peptide\_file "peptides.fasta" --HLA\_file "hlas.fasta" --threshold 0.5 --cut\_length 10 --cut\_peptide True --output\_dir './results/' --output\_attention True --output\_heatmap True --output\_mutation True

Namespace(HLA\_file='hlas.fasta', cut\_length=10, cut\_peptide=True, output\_attention=True, output\_dir="'./results/'", output\_heatmap=True, output\_mutation=True, peptide\_file='peptides.fasta', threshold=0.5)

# Samples = 18

No HLA-A\*11:01 with 8, Use the overall attention for pepAAtype-peppsition

# Samples = 345

\*\*\*\*\*\*\*\*\*\* HLA-A\*11:01 | AEAFIQSA → # Mutation peptides = 344

If you want to use IEDB tools to predict IC50, please use these format:

AEAFIQSA AEAFIQSF DEAFIQSA APAFIQSA AEAFIQSV LEAFIQSA AAAFIQSA AEAFIQSL FEAFIQSA APAFIQSL FEDFIQSA DAAFIQSA AEALIQSF LEAFIQSF LEDFIQSA FEAFIQSF LPAFIQSA FEAFIQSV FEAFIQSL AEAVIQSV LEAFIQSL APAFIQSF FPAFIQSA DELFIQSA DEDFIQSA LAAFIQSA FEKFIQSA LEAFIQSV LELFIQSA AAAFIQSL DPAFIQSA FELFIQSA DEKFIQSA APAFIQSV FAAFIQSA DEAFIQSV AEAVIQSL AEALIQSV DEAFIQSF AAAFIQSV LEKFIQSA AEAVIQSF AEAKIQSL AAAFIQSF AEALIQSL DEAFIQSL AEAKIQSF AEAKIQSV AEDVIQSF LELFIQSV DELFIQSF FPAFIQSV DALFIQSA AELKIQSV LELFIQSL AEDKIQSV LPAFIQSL FEAVIQSF LAAFIQSF FAAFIQSF DEAKIQSV FELFIQSF DEAKIQSL FAAFIQSV AEKLIQSV DPAFIQSF FEDFIQSL FPDFIQSA APAKIQSV DEDFIQSF DEKFIQSF AAALIQSF LAAFIQSV APAVIQSL LEAVIQSF LELFIQSF FELFIQSV FPKFIQSA FPAFIQSF APALIQSV LEAVIQSV DAKFIQSA DPKFIQSA LEKFIQSV AELKIQSL APAKIQSF LEAKIQSV FPAFIQSL DADFIQSA DEAVIQSF FPLFIQSA APAVIQSF AEKKIQSL DEALIQSL DELFIQSV FEAVIQSV LEKFIQSF LPAFIQSF DAAFIQSV AEDLIQSF FEALIQSL FEALIQSV AELVIQSL FADFIQSA AAAVIQSF AEKLIQSF DEAVIQSL AELKIQSF DEKFIQSV FALFIQSA AAAKIQSL DEALIQSV AAAKIQSF LEDFIQSL LEDFIQSF DEKFIQSL LEKFIQSL DPDFIQSA FEDFIQSF LPKFIQSA APAVIQSV FEDFIQSV AEDLIQSV DPLFIQSA FEAKIQSL DAAFIQSF AELLIQSF LEDFIQSV DEAKIQSF LEALIQSF AELLIQSL APALIQSL LPAFIQSV AEDLIQSL AELVIQSF LALFIQSA FEALIQSF AEDVIQSV DEDFIQSV AEKKIQSV LEAVIQSL AEDKIQSL AAAVIQSV AAAKIQSV AEKVIQSL LPLFIQSA AELLIQSV FEKFIQSL FEAVIQSL FEAKIQSV APALIQSF LEAKIQSL AEDVIQSL FEKFIQSV LEAKIQSF FAAFIQSL AEDKIQSF AEKVIQSF AAALIQSV DAAFIQSL AELVIQSV AAAVIQSL DELFIQSL AAALIQSL AEKKIQSF AEKLIQSL LADFIQSA AEKVIQSV DPAFIQSV LPDFIQSA DEDFIQSL APAKIQSL DPAFIQSL FEKFIQSF FEAKIQSF FELFIQSL DEALIQSF LEALIQSL FAKFIQSA LAKFIQSA LAAFIQSL LEALIQSV DEAVIQSV LAAVIQSL DAAVIQSL FAAKIQSL DPAKIQSV DPKFIQSF DPAKIQSL LPDFIQSL AAKVIQSL LADFIQSV FPAVIQSF APLVIQSL LPALIQSF AADKIQSV FPAVIQSV APDKIQSV APKKIQSF DAAKIQSF AAKVIQSF DPLFIQSL FAAKIQSF LPKFIQSV DAAVIQSV AADVIQSL AALKIQSV APDLIQSV LPKFIQSF AADKIQSL AAKLIQSF LAAKIQSF DAAKIQSL FPLFIQSV FAALIQSF DAAKIQSV FPKFIQSV LAKFIQSL APLLIQSF APKVIQSF AALVIQSV LAAVIQSF LPAKIQSL AALVIQSL LAALIQSL LAALIQSV DPAVIQSF LAAKIQSV FPDFIQSL LPLFIQSF DALFIQSL APDVIQSF AALLIQSV LPAKIQSV AADLIQSV FALFIQSL AAKLIQSV FPDFIQSV LPAVIQSL FPAKIQSV LPALIQSL APDLIQSL LALFIQSL LPDFIQSV FPAVIQSL FADFIQSV FALFIQSF DAALIQSL LPAVIQSF APDKIQSF FPALIQSF APDLIQSF FAKFIQSV APDVIQSV AALLIQSF DPDFIQSV DADFIQSF APLVIQSF AAKLIQSL AAKKIQSV FPKFIQSF APLLIQSV DADFIQSV APKKIQSL AAKVIQSV DPAVIQSV FAAKIQSV LPAKIQSF APLKIQSL LPKFIQSL FAAVIQSV APKLIQSF DPALIQSF DPDFIQSF APLVIQSV DALFIQSF APDKIQSL FADFIQSL FAKFIQSL DAALIQSV LPALIQSV AADVIQSF APKVIQSV LAKFIQSF FPALIQSV FPAKIQSL FADFIQSF FAALIQSL APLKIQSF FPKFIQSL LAAVIQSV APLLIQSL DADFIQSL LPLFIQSV APDVIQSL FPAKIQSF APKVIQSL DPLFIQSF FALFIQSV FPLFIQSF AADLIQSF DAKFIQSV LADFIQSF LAAKIQSL AADVIQSV AADKIQSF DPKFIQSL DPAVIQSL FPLFIQSL DAAVIQSF LAALIQSF FAKFIQSF FPALIQSL LALFIQSF FAALIQSV LADFIQSL DAALIQSF LPLFIQSL DPAKIQSF LPAVIQSV DPALIQSV DPDFIQSL FAAVIQSF DPKFIQSV AADLIQSL APKLIQSV AALLIQSL APKKIQSV AALVIQSF DAKFIQSL DAKFIQSF AAKKIQSF LAKFIQSV LPDFIQSF DPALIQSL FPDFIQSF DALFIQSV AALKIQSL LALFIQSV APKLIQSL AALKIQSF AAKKIQSL FAAVIQSL APLKIQSV DPLFIQSV

No HLA-A\*11:01 with 8, Use the overall attention for pepAAtype-peppsition

# Samples = 345

\*\*\*\*\*\*\*\*\*\* HLA-A\*11:01 | AEAFIQPI → # Mutation peptides = 344

If you want to use IEDB tools to predict IC50, please use these format:

AEAFIQPI AEAFIQPF FEAFIQPI DEAFIQPI LEAFIQPI AEAFIQPL AAAFIQPI AEAFIQPV APAFIQPI DEAFIQPF DPAFIQPI AAAFIQPL FPAFIQPI LEAFIQPL AEALIQPF DEAFIQPV AEAKIQPV AEALIQPL DEKFIQPI LEAFIQPF FEAFIQPF APAFIQPF LPAFIQPI LEDFIQPI FEAFIQPV DEAFIQPL LELFIQPI AEALIQPV LEAFIQPV LAAFIQPI AEAKIQPL AEAVIQPL FEAFIQPL FELFIQPI APAFIQPL AEAVIQPV AAAFIQPF DEDFIQPI FAAFIQPI AEAVIQPF DAAFIQPI FEKFIQPI LEKFIQPI AAAFIQPV APAFIQPV DELFIQPI FEDFIQPI AEAKIQPF AELLIQPV FELFIQPF DAAFIQPL LEDFIQPV APAVIQPL LEAVIQPL DEKFIQPL FEALIQPL FPLFIQPI AELLIQPL LAAFIQPL DEAKIQPF DPDFIQPI FPAFIQPF DEDFIQPL DEKFIQPF LELFIQPL AEKLIQPV LPLFIQPI LEKFIQPF FEAKIQPL LPKFIQPI DEALIQPV AEKVIQPL AEDLIQPV APAKIQPV AAALIQPF FEAVIQPF AAALIQPV FEALIQPF FELFIQPL AEKLIQPF DEAVIQPL LAAFIQPF LEAKIQPL LEKFIQPL LELFIQPV DPAFIQPF AAALIQPL AEDKIQPL AELKIQPV FPDFIQPI LEALIQPV LEAKIQPV DAAFIQPF LELFIQPF DPLFIQPI AEDLIQPF FELFIQPV AEKLIQPL AEKKIQPL LEALIQPF LEAVIQPF LEDFIQPF AAAVIQPF DEKFIQPV LAAFIQPV FEDFIQPV AEKVIQPF LEAVIQPV FAAFIQPL FEKFIQPL LAKFIQPI FADFIQPI DEAKIQPV FPAFIQPV FPKFIQPI AEKVIQPV FAKFIQPI APAKIQPF FALFIQPI LPAFIQPL FAAFIQPF APALIQPL DAAFIQPV LPDFIQPI DELFIQPF LADFIQPI FEALIQPV AEDVIQPF APALIQPV LEAKIQPF APAKIQPL DEAVIQPF AELVIQPF DEALIQPL AEKKIQPV FEAKIQPF AEKKIQPF LEKFIQPV DELFIQPL APAVIQPV FEDFIQPF AAAVIQPL LEALIQPL AELVIQPL APALIQPF AAAVIQPV LALFIQPI AELVIQPV AAAKIQPL DPAFIQPV FEKFIQPV AELLIQPF LPAFIQPV AELKIQPL FAAFIQPV FEAVIQPL LEDFIQPL AEDLIQPL AAAKIQPF FEKFIQPF AEDKIQPV DELFIQPV FEAVIQPV DPKFIQPI FEAKIQPV AELKIQPF DPAFIQPL DEALIQPF AEDKIQPF AEDVIQPV AEDVIQPL FEDFIQPL LPAFIQPF DAKFIQPI DADFIQPI APAVIQPF FPAFIQPL DEDFIQPV DEAKIQPL DALFIQPI DEAVIQPV AAAKIQPV DEDFIQPF DAAKIQPL LALFIQPF FAKFIQPL APKVIQPV FPALIQPV DAALIQPL LPLFIQPL LAALIQPF AAKLIQPL APKLIQPF FALFIQPL DPALIQPV FPKFIQPL APLLIQPL DPDFIQPV FPDFIQPL LPALIQPL LPAKIQPV APDLIQPF FPKFIQPF FAAKIQPL FPDFIQPF APKKIQPF AADVIQPV LAAKIQPV LAKFIQPV FAKFIQPF LAAVIQPL DADFIQPV DPAVIQPL AADKIQPV FADFIQPL AALKIQPL LADFIQPV AADLIQPF FPAVIQPL DALFIQPV FPDFIQPV FAAKIQPF DPKFIQPF APKKIQPL APDKIQPF APLKIQPL APDLIQPV LAAKIQPF DPAKIQPL APLVIQPV LAAKIQPL DPLFIQPV APKVIQPF DAALIQPF AAKKIQPF AALVIQPL FAKFIQPV APLLIQPF LAALIQPL AALVIQPF DPLFIQPL DADFIQPF DPALIQPL DPAKIQPF APDKIQPV DPLFIQPF AAKKIQPL AALVIQPV LPDFIQPV DAKFIQPL DAAKIQPV DAAVIQPV AAKVIQPL FPAVIQPV FALFIQPV AADVIQPF APDKIQPL DAKFIQPF APKLIQPL DPAKIQPV FPLFIQPF LPKFIQPF APDVIQPL AALLIQPF APKLIQPV LPLFIQPF FPALIQPF DPAVIQPF APDLIQPL AADVIQPL APKVIQPL FADFIQPF AALKIQPF APLVIQPL AALKIQPV LPLFIQPV AADKIQPF DPALIQPF FAAVIQPL DAAVIQPL LPAKIQPF FPLFIQPL LPAVIQPV LPKFIQPL LPAKIQPL DAAKIQPF LPKFIQPV FPKFIQPV FPAKIQPL DALFIQPL LAAVIQPF AALLIQPV LPDFIQPF FPAKIQPF FPAVIQPF LADFIQPF APLKIQPV LAKFIQPL FAAVIQPF LPALIQPV LAKFIQPF LPALIQPF DPAVIQPV APLKIQPF FPLFIQPV FALFIQPF LAALIQPV AADKIQPL APDVIQPF FAAKIQPV LADFIQPL DPDFIQPF FAALIQPF AAKVIQPF DAKFIQPV DAAVIQPF FAAVIQPV AAKLIQPF APDVIQPV APLLIQPV LAAVIQPV AAKVIQPV LALFIQPL DPDFIQPL FAALIQPL LPAVIQPL DPKFIQPL LPDFIQPL DALFIQPF AADLIQPL FADFIQPV DAALIQPV DPKFIQPV AALLIQPL AAKKIQPV LPAVIQPF AAKLIQPV AADLIQPV FAALIQPV FPALIQPL FPAKIQPV DADFIQPL APLVIQPF APKKIQPV LALFIQPV

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 343

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | KVYEGVWKKA → # Mutation peptides = 342

If you want to use IEDB tools to predict IC50, please use these format:

KVYEGVWKKA KEYEGVWKKA AVYEGVWKKA KLYEGVWKKA KVYEGVWKKL SVYEGVWKKA KRYEGVWKKA KVYEGVWKKY KVYEGVWKKF RVYEGVWKKA ALYEGVWKKA AVYEGVWKKF SLYEGVWKKA KLYEGVWKLA SVYEGVWKKY AEYEGVWKKA KRYEGVWKKY KEYEGVWKKL KRYEGVWKTA SVYEGVWKKF RRYEGVWKKA REYEGVWKKA RVYEGVWKKL SRYEGVWKKA KRYEGVWKKF ARYEGVWKKA KEYEGVWKSA RVYEGVWKKF KEYEGVWKTA KEYEGVWKLA KLYEGVWKSA KEYEGVWKKY KRYEGVWKKL RVYEGVWKKY RLYEGVWKKA SEYEGVWKKA SVYEGVWKKL AVYEGVWKKL KRYEGVWKSA KLYEGVWKKL AVYEGVWKKY KLYEGVWKKY KLYEGVWKKF KLYEGVWKTA KRYEGVWKLA KEYEGVWKKF SLYEGVWKSA ARYEGVWKSA KLIEGVWKKY RRYEGVWKKY KEFEGVWKKY RLYEGVWKLA KLFEGVWKKF KRIEGVWKKL ARYEGVWKTA AEYEGVWKLA KEFEGVWKKF ARYEGVWKKF ALYEGVWKKF KLFEGVWKKL SEYEGVWKKY KRIEGVWKKY KRFEGVWKKF RLYEGVWKSA KLLEGVWKKY KRFEGVWKKL KLLEGVWKKF AEYEGVWKKL ALYEGVWKSA KELEGVWKKL SEYEGVWKKF SEYEGVWKSA RRYEGVWKTA REYEGVWKKF KRLEGVWKKL ALYEGVWKTA REYEGVWKKL ARYEGVWKKY KLIEGVWKKL REYEGVWKTA RLYEGVWKKL SLYEGVWKKY KEIEGVWKKL KLIEGVWKKF SRYEGVWKTA ARYEGVWKKL KLLEGVWKKL SEYEGVWKTA KLFEGVWKKY AEYEGVWKTA KRLEGVWKKY KRIEGVWKKF RRYEGVWKSA RRYEGVWKKF SRYEGVWKSA SLYEGVWKTA RRYEGVWKLA KRFEGVWKKY REYEGVWKLA SRYEGVWKKL KELEGVWKKF SRYEGVWKKF RRYEGVWKKL SEYEGVWKKL SEYEGVWKLA ALYEGVWKKY KEFEGVWKKL ARYEGVWKLA KEIEGVWKKY RLYEGVWKTA RLYEGVWKKY AEYEGVWKKF ALYEGVWKKL KELEGVWKKY SLYEGVWKKF AEYEGVWKKY KEIEGVWKKF SRYEGVWKLA SRYEGVWKKY ALYEGVWKLA KRLEGVWKKF RLYEGVWKKF SLYEGVWKLA REYEGVWKKY SLYEGVWKKL AEYEGVWKSA REYEGVWKSA KEFEGVWLKL REYELVWKTA KLLEGVWVKY AELEGVWKKF AELEGVWKKL KLIEGVWIKY SRIEGVWKKF RRIEGVWKKF SLYEPVWKLA KRLEGVWIKL KELEGVWVKL KLFEGVWVKL RLIEGVWKKL KRIEGVWVKF KRIEGVWLKL SRYELVWKSA SRIEGVWKKY KEIEGVWLKL AEIEGVWKKY RLIEGVWKKY SLYELVWKTA RRYELVWKTA AEIEGVWKKF REYELVWKSA KEIEGVWVKL SRLEGVWKKL RLYELVWKSA REYEPVWKTA ALLEGVWKKY SLYEPVWKTA SEFEGVWKKF RLLEGVWKKY KRLEGVWLKL KELEGVWIKL REIEGVWKKF AEYELVWKLA RLYELVWKTA ARFEGVWKKF KRFEGVWLKF SLIEGVWKKL RRYELVWKSA KLFEGVWLKY RLLEGVWKKL ALYELVWKLA KEIEGVWIKF ARLEGVWKKF AEYEPVWKLA KELEGVWIKF SEYEPVWKLA SELEGVWKKY SRYEPVWKLA RLFEGVWKKL RRLEGVWKKL KLIEGVWVKF REYELVWKLA ARIEGVWKKY KRFEGVWVKL KEFEGVWVKY SLLEGVWKKL KRIEGVWVKY SEYEPVWKTA KEFEGVWLKY SEFEGVWKKL ALYEPVWKLA SEYEPVWKSA ARFEGVWKKL ALYELVWKTA KEIEGVWLKF KRLEGVWLKF SLLEGVWKKY SLYEPVWKSA AEIEGVWKKL KRFEGVWIKF ALYELVWKSA SRYELVWKLA AEFEGVWKKF AEYEPVWKTA KLFEGVWVKF SEIEGVWKKY KELEGVWVKF RLYEPVWKTA RRFEGVWKKF KEIEGVWIKY KEIEGVWLKY RRIEGVWKKL ALFEGVWKKL ALYEPVWKTA KRIEGVWVKL SRFEGVWKKF ALLEGVWKKF ALLEGVWKKL KLFEGVWIKY SEYELVWKSA AEFEGVWKKY AELEGVWKKY KLIEGVWVKL SRLEGVWKKF SLLEGVWKKF KLFEGVWVKY KRIEGVWIKL AEYEPVWKSA RLFEGVWKKY KLLEGVWIKY KRFEGVWLKY KRIEGVWLKF KLLEGVWLKL KLIEGVWVKY REFEGVWKKF RLFEGVWKKF SLIEGVWKKF SLYELVWKLA KLFEGVWLKL SRYEPVWKTA RLYEPVWKSA KRIEGVWIKF KELEGVWVKY SEIEGVWKKL ARYELVWKTA KEIEGVWIKL SLYELVWKSA REYEPVWKSA REIEGVWKKY ALYEPVWKSA KLFEGVWIKF KLFEGVWIKL KEFEGVWIKY ALFEGVWKKY ARYELVWKLA AEFEGVWKKL SLFEGVWKKY RRIEGVWKKY KLFEGVWLKF KLLEGVWIKL SRFEGVWKKY AEYELVWKSA KEFEGVWVKL SRYELVWKTA KLLEGVWLKF KLIEGVWLKY ARFEGVWKKY RRFEGVWKKY REFEGVWKKL KLIEGVWIKL SEFEGVWKKY KRFEGVWVKF KLLEGVWLKY ARIEGVWKKF SEIEGVWKKF KRFEGVWIKL RRYEPVWKSA KLIEGVWLKL SLFEGVWKKL KRFEGVWVKY RRYEPVWKLA RLLEGVWKKF ALIEGVWKKF KRLEGVWVKY KEIEGVWVKY KRIEGVWIKY SLIEGVWKKY SEYELVWKLA KRLEGVWIKF AEYELVWKTA KLIEGVWIKF KRLEGVWLKY KEFEGVWLKF RRLEGVWKKY SEYELVWKTA RLIEGVWKKF SELEGVWKKL ARYELVWKSA ARIEGVWKKL ALIEGVWKKY ARLEGVWKKY KEFEGVWIKF ARYEPVWKLA RELEGVWKKY KRIEGVWLKY RLYELVWKLA KEIEGVWVKF REIEGVWKKL SLFEGVWKKF ARYEPVWKTA KRLEGVWVKL REFEGVWKKY KRFEGVWIKY ARLEGVWKKL SRIEGVWKKL KLLEGVWVKL KEFEGVWVKF SRLEGVWKKY RLYEPVWKLA KELEGVWIKY RRFEGVWKKL KLIEGVWLKF RELEGVWKKL RRYEPVWKTA SRFEGVWKKL SRYEPVWKSA ARYEPVWKSA ALIEGVWKKL SELEGVWKKF RRLEGVWKKF KELEGVWLKY KELEGVWLKL RELEGVWKKF RRYELVWKLA KRFEGVWLKL KLLEGVWIKF REYEPVWKLA KRLEGVWVKF ALFEGVWKKF KLLEGVWVKF KRLEGVWIKY KEFEGVWIKL KELEGVWLKF

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 370

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | VYEGVWKKAE → # Mutation peptides = 369

If you want to use IEDB tools to predict IC50, please use these format:

VYEGVWKKAE VYEGVWKKAL VYEGVWKKAY VYEGVWKKAF VEEGVWKKAE SYEGVWKKAE AYEGVWKKAE VLEGVWKKAE RYEGVWKKAE VREGVWKKAE SLEGVWKKAE RYEGVWKKAL VREGVWKKLE VREGVWKKSE RREGVWKKAE AEEGVWKKAE VLEGVWKKAF VEEGVWKKAF VLEGVWKKAY VEEGVWKKLE SEEGVWKKAE SYEGVWKKAL VEEGVWKKAY SREGVWKKAE VLEGVWKKSE REEGVWKKAE VEEGVWKKSE RLEGVWKKAE VREGVWKKAY AYEGVWKKAY VREGVWKKTE RYEGVWKKAF ALEGVWKKAE VLEGVWKKLE SYEGVWKKAF VREGVWKKAF RYEGVWKKAY VLEGVWKKTE VEEGVWKKAL AYEGVWKKAF VLEGVWKKAL VEEGVWKKTE VREGVWKKAL SYEGVWKKAY AYEGVWKKAL AREGVWKKAE VELGVWKKAL AEEGVWKKLE SREGVWKKAF SREGVWKKTE VLLGVWKKAL VLIGVWKKAL AEEGVWKKSE REEGVWKKLE VLFGVWKKAL VRFGVWKKAY VLFGVWKKAY SLEGVWKKSE SLEGVWKKLE AREGVWKKAY VEIGVWKKAF SLEGVWKKAL ALEGVWKKTE SREGVWKKAY VRFGVWKKAF REEGVWKKAF VRLGVWKKAL RREGVWKKAY VLLGVWKKAF SEEGVWKKAY SEEGVWKKLE RREGVWKKAF VEIGVWKKAL VRIGVWKKAY VRFGVWKKAL AREGVWKKSE AREGVWKKAF SEEGVWKKTE VEFGVWKKAL SLEGVWKKAF VEIGVWKKAY SEEGVWKKAL VLFGVWKKAF ALEGVWKKAF VEFGVWKKAY VLIGVWKKAF RLEGVWKKAF RREGVWKKLE VELGVWKKAY AEEGVWKKTE VLLGVWKKAY VELGVWKKAF SLEGVWKKTE SLEGVWKKAY SREGVWKKLE VRIGVWKKAF RLEGVWKKAL REEGVWKKTE RLEGVWKKTE AEEGVWKKAL REEGVWKKAL AREGVWKKLE SEEGVWKKSE REEGVWKKSE AREGVWKKAL ALEGVWKKAY RLEGVWKKLE VEFGVWKKAF SREGVWKKAL RREGVWKKTE AEEGVWKKAY ALEGVWKKAL AREGVWKKTE SREGVWKKSE RLEGVWKKAY RLEGVWKKSE VRLGVWKKAY VRLGVWKKAF RREGVWKKSE ALEGVWKKSE AEEGVWKKAF SEEGVWKKAF REEGVWKKAY VLIGVWKKAY VRIGVWKKAL ALEGVWKKLE RREGVWKKAL REFGVWKKAF REIGVWKKAF RRIGVWKKAF VELGVWKVAY AREGVWKKTF SEEGVWKKSL VRLGVWKVAL SEIGVWKKAF VLIGVWKVAY SREGVWKKSL SLIGVWKKAY ALEGVWKKLY RREGVWKKLF RRFGVWKKAY VLIGVWKVAL SLEGVWKKTL AEEGVWKKSF RELGVWKKAY VLFGVWKIAL VEIGVWKIAL AELGVWKKAY RRLGVWKKAY VLFGVWKLAF VRLGVWKLAF VEFGVWKVAL RRFGVWKKAF VLFGVWKLAL VRFGVWKVAL RLEGVWKKSL AEFGVWKKAL RLEGVWKKTF RLFGVWKKAL RLLGVWKKAL SEFGVWKKAY ALFGVWKKAY RELGVWKKAL VLLGVWKIAL ALEGVWKKLL AREGVWKKLF AREGVWKKSL REIGVWKKAL RREGVWKKTF AEEGVWKKLL SRIGVWKKAF RREGVWKKSF VELGVWKVAL RRLGVWKKAL VRFGVWKIAL VEIGVWKVAY REEGVWKKTL SEEGVWKKTF SELGVWKKAF ALFGVWKKAL SEFGVWKKAF SEEGVWKKSF SLEGVWKKTY VRLGVWKVAY RREGVWKKLL VEIGVWKIAY VEIGVWKVAL SRIGVWKKAY SREGVWKKSF SLFGVWKKAF SLEGVWKKSY VLFGVWKIAY ARFGVWKKAY AREGVWKKLY ARFGVWKKAL SREGVWKKLF VELGVWKIAY RLEGVWKKTY AREGVWKKSF AELGVWKKAF VRIGVWKIAY RLEGVWKKLL RELGVWKKAF SLEGVWKKLF ARIGVWKKAF REEGVWKKSY AEFGVWKKAF ALIGVWKKAF VEIGVWKVAF VRFGVWKIAF VEFGVWKIAL VLFGVWKVAL VLFGVWKLAY RLFGVWKKAF AEEGVWKKTY SRLGVWKKAF AEFGVWKKAY SLIGVWKKAL SREGVWKKSY VLFGVWKVAY REEGVWKKLL SLLGVWKKAL VRIGVWKLAL ALEGVWKKTL VELGVWKLAY ARLGVWKKAY SRLGVWKKAL VLLGVWKVAF ALEGVWKKSY RLEGVWKKLF SRFGVWKKAY VEFGVWKIAY VEIGVWKLAF ALEGVWKKSL REIGVWKKAY VELGVWKIAF SEEGVWKKTL VEIGVWKLAL VLIGVWKVAF RREGVWKKLY SLLGVWKKAY SEIGVWKKAL VLLGVWKIAF AEEGVWKKSL RRIGVWKKAL VRLGVWKIAL AEIGVWKKAF SEFGVWKKAL RLIGVWKKAY SLEGVWKKLY AEIGVWKKAL VEFGVWKVAY VLIGVWKIAL SREGVWKKTL VRIGVWKVAY VLLGVWKLAF VLLGVWKVAY AREGVWKKTL SEEGVWKKTY AEEGVWKKTF REFGVWKKAY REEGVWKKLY VRIGVWKVAF SELGVWKKAY VRFGVWKVAY ARFGVWKKAF VEFGVWKLAL RREGVWKKTL ALLGVWKKAY SELGVWKKAL SEEGVWKKSY VELGVWKLAL SLLGVWKKAF VRIGVWKLAY VRLGVWKIAF VRIGVWKVAL AREGVWKKSY SRFGVWKKAF VRIGVWKIAL RREGVWKKSL AREGVWKKTY VRFGVWKLAF VELGVWKIAL VELGVWKVAF AREGVWKKLL SLEGVWKKSF VRLGVWKLAL AEIGVWKKAY VEIGVWKIAF RREGVWKKSY RLEGVWKKSY RRLGVWKKAF ALEGVWKKSF VLFGVWKIAF ARIGVWKKAL RLEGVWKKLY ALEGVWKKTF VRLGVWKLAY VRFGVWKLAL SLFGVWKKAL RLIGVWKKAF VRFGVWKIAY AEEGVWKKLF VRFGVWKLAY SRIGVWKKAL VEFGVWKVAF VLIGVWKLAF REFGVWKKAL REEGVWKKTF SLFGVWKKAY SLEGVWKKSL RREGVWKKTY SRLGVWKKAY ALEGVWKKTY ALIGVWKKAL SEEGVWKKLF VLIGVWKIAF ALLGVWKKAL VLIGVWKIAY VLFGVWKVAF SREGVWKKTF VLLGVWKLAY AEEGVWKKTL VLIGVWKLAY VLIGVWKLAL VRIGVWKLAF ALLGVWKKAF VEFGVWKLAF SREGVWKKTY ALEGVWKKLF REEGVWKKLF RLEGVWKKSF SRFGVWKKAL REEGVWKKSF REEGVWKKSL VEFGVWKLAY ARLGVWKKAL VELGVWKLAF VEIGVWKLAY RRFGVWKKAL RRIGVWKKAY AELGVWKKAL SLEGVWKKTF RLIGVWKKAL RLLGVWKKAY SREGVWKKLY ALFGVWKKAF REEGVWKKTY RLEGVWKKTL VRIGVWKIAF VRFGVWKVAF AEEGVWKKSY SEEGVWKKLY SEEGVWKKLL VLLGVWKVAL AEEGVWKKLY SLIGVWKKAF ARIGVWKKAY VLLGVWKLAL SLEGVWKKLL SEIGVWKKAY ARLGVWKKAF RLFGVWKKAY VRLGVWKIAY RLLGVWKKAF ALIGVWKKAY VLLGVWKIAY SREGVWKKLL VRLGVWKVAF VEFGVWKIAF

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 357

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | YEGVWKKAEA → # Mutation peptides = 356

If you want to use IEDB tools to predict IC50, please use these format:

YEGVWKKAEA YLGVWKKAEA YEGVWKKALA YELVWKKAEA YRGVWKKAEA YEGVWKKAEF YEFVWKKAEA YEGVWKKAEY YEGVWKKAEL REGVWKKAEA YEIVWKKAEA YEGVWKKATA YEGVWKKASA SEGVWKKAEA AEGVWKKAEA YRGVWKKAEF SEGVWKKATA SEGVWKKALA YELVWKKAEY ALGVWKKAEA SEGVWKKAEL AEGVWKKAEF SEGVWKKASA YRGVWKKAEL YEFVWKKAEL AEGVWKKAEL SLGVWKKAEA YLGVWKKALA REGVWKKASA YELVWKKAEL REGVWKKAEY SRGVWKKAEA YLGVWKKASA ARGVWKKAEA YRGVWKKASA RLGVWKKAEA YEIVWKKAEY YEIVWKKAEL RRGVWKKAEA AEGVWKKATA YEFVWKKAEY AEGVWKKAEY YRGVWKKATA AEGVWKKASA REGVWKKATA YRGVWKKAEY YEIVWKKAEF YRGVWKKALA SEGVWKKAEY YLGVWKKAEF YLGVWKKAEY REGVWKKAEF YLGVWKKATA YELVWKKAEF REGVWKKAEL REGVWKKALA YEFVWKKAEF YLGVWKKAEL SEGVWKKAEF AEGVWKKALA REFVWKKALA SELVWKKAEF SELVWKKALA YEFVWKKIEL YLLVWKKAEF SRGVWKKATA RELVWKKAEY SEFVWKKALA RELVWKKASA YEFVWKKVEF YEFVWKKLEY REIVWKKASA RLGVWKKAEL SLGVWKKATA YLLVWKKAEL REIVWKKATA AEIVWKKASA RLGVWKKATA YEIVWKKVEY SLGVWKKAEF REFVWKKAEF AEIVWKKAEF YLFVWKKAEL AEFVWKKASA SRGVWKKALA YRIVWKKAEF REIVWKKAEF REIVWKKAEL YEFVWKKLEF ALGVWKKAEY SLGVWKKALA AEFVWKKAEL SLGVWKKAEY SEFVWKKAEL ARGVWKKAEL SELVWKKASA ALGVWKKAEL YLFVWKKAEY YLFVWKKAEF YEIVWKKIEF YLLVWKKAEY RRGVWKKATA YELVWKKLEY YEFVWKKIEY YRFVWKKAEY YELVWKKVEL REFVWKKAEL RRGVWKKAEL SEIVWKKALA AEIVWKKALA YRFVWKKAEF YEIVWKKVEF YEIVWKKLEL SELVWKKAEY AEFVWKKAEY ARGVWKKATA AELVWKKAEF RELVWKKAEL ARGVWKKASA YEIVWKKIEY ARGVWKKALA SRGVWKKASA RLGVWKKAEY YELVWKKIEF YEIVWKKLEY ALGVWKKASA ALGVWKKATA RLGVWKKAEF ALGVWKKAEF YEFVWKKIEF AEFVWKKALA YRIVWKKAEY YLIVWKKAEL AEIVWKKAEY YELVWKKVEF YEFVWKKLEL YEFVWKKVEL AEFVWKKAEF RLGVWKKASA REFVWKKAEY REIVWKKALA YLIVWKKAEY ARGVWKKAEF SELVWKKAEL RLGVWKKALA RELVWKKALA RRGVWKKAEY AELVWKKASA YRLVWKKAEL YRLVWKKAEF RRGVWKKAEF YEIVWKKLEF YELVWKKLEF REFVWKKATA YELVWKKLEL YRLVWKKAEY SELVWKKATA AEIVWKKATA SEFVWKKAEY RELVWKKAEF ARGVWKKAEY SEFVWKKATA SEFVWKKAEF REIVWKKAEY RRGVWKKASA AELVWKKATA REFVWKKASA SEFVWKKASA YLIVWKKAEF SRGVWKKAEY RELVWKKATA YEIVWKKVEL SEIVWKKAEY YRIVWKKAEL SLGVWKKAEL YELVWKKIEY SEIVWKKASA AELVWKKALA SEIVWKKAEL YRFVWKKAEL AEIVWKKAEL SEIVWKKATA SRGVWKKAEL YEIVWKKIEL ALGVWKKALA AEFVWKKATA SRGVWKKAEF SEIVWKKAEF AELVWKKAEL YELVWKKVEY SLGVWKKASA RRGVWKKALA AELVWKKAEY YEFVWKKVEY YELVWKKIEL YLFVWKKLEF ALFVWKKASA RLIVWKKASA ALIVWKKALA ARLVWKKAEF YRFVWKKLEY YRLVWKKLEF YLIVWKKLEL SLIVWKKAEY YLFVWKKLEL ARIVWKKAEL SRIVWKKASA YRLVWKKIEL RLFVWKKAEF SLLVWKKAEL RLFVWKKAEY RLLVWKKAEY ALLVWKKAEL SLFVWKKATA ARLVWKKATA ARLVWKKAEL YLFVWKKVEY YRLVWKKLEL YLIVWKKVEF SLLVWKKAEY YLFVWKKVEF RLFVWKKATA ALLVWKKASA ALIVWKKAEL SRLVWKKAEL YRFVWKKVEY ALFVWKKAEY SRFVWKKALA RLFVWKKALA YLLVWKKVEF ALFVWKKAEF ALFVWKKALA RRLVWKKAEY YLIVWKKIEL SLIVWKKAEF SRFVWKKASA SRLVWKKATA ALIVWKKATA RLIVWKKAEL YRIVWKKVEF ALFVWKKATA YRLVWKKVEY SRFVWKKAEF SRFVWKKAEL SLFVWKKAEL SLIVWKKALA ALIVWKKAEF RRIVWKKASA SRIVWKKATA RLIVWKKATA ALLVWKKATA YLIVWKKIEF ALIVWKKASA SLIVWKKATA YLFVWKKIEL SLIVWKKASA SRLVWKKAEF ARIVWKKAEY ARFVWKKALA RRLVWKKATA ARLVWKKASA RRFVWKKAEY YLIVWKKIEY ALLVWKKAEY YRIVWKKIEL YLLVWKKIEY ALFVWKKAEL ARFVWKKASA YRFVWKKVEL ARFVWKKATA YLIVWKKVEL SRFVWKKAEY SLLVWKKALA ALLVWKKALA ALIVWKKAEY SRIVWKKAEL YRFVWKKIEF ARFVWKKAEF ALLVWKKAEF YRIVWKKIEF RRIVWKKAEL ARLVWKKAEY YLLVWKKLEF SRFVWKKATA RLLVWKKASA YLLVWKKIEF RRFVWKKAEF RRLVWKKAEL RLLVWKKATA YLFVWKKIEY RRFVWKKATA YLLVWKKVEY SRIVWKKAEY YRFVWKKLEF YLFVWKKLEY SLLVWKKASA YRFVWKKVEF RRLVWKKALA RRIVWKKATA YRIVWKKVEL RLLVWKKAEL YRFVWKKIEY SRIVWKKAEF ARIVWKKATA YRLVWKKLEY SLFVWKKAEY YRIVWKKLEF RRFVWKKASA YLLVWKKLEL SLFVWKKAEF YRLVWKKIEY RLIVWKKALA RLFVWKKAEL RRFVWKKALA ARFVWKKAEY YLLVWKKIEL ARLVWKKALA YLIVWKKLEY YRIVWKKLEL YRLVWKKIEF RLIVWKKAEF RRFVWKKAEL SRLVWKKASA YRLVWKKVEL RRLVWKKAEF SLLVWKKATA YRFVWKKLEL YLFVWKKIEF ARIVWKKALA SLIVWKKAEL YLLVWKKVEL YRLVWKKVEF YLLVWKKLEY RLFVWKKASA YRIVWKKVEY RLLVWKKAEF ARFVWKKAEL YLIVWKKVEY SRLVWKKALA SRLVWKKAEY RRIVWKKAEF YRIVWKKLEY RRLVWKKASA ARIVWKKAEF ARIVWKKASA YRFVWKKIEL RRIVWKKALA SLFVWKKALA RLLVWKKALA RLIVWKKAEY SLFVWKKASA YLFVWKKVEL SLLVWKKAEF SRIVWKKALA YLIVWKKLEF RRIVWKKAEY YRIVWKKIEY

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 348

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | EGVWKKAEAF → # Mutation peptides = 347

If you want to use IEDB tools to predict IC50, please use these format:

EGVWKKAEAF ELVWKKAEAF ERVWKKAEAF EEVWKKAEAF AGVWKKAEAF RGVWKKAEAF SGVWKKAEAF EGVWKKAEAY EGVWKKAEAL ELVWKKAEAL ERVWKKAELF SLVWKKAEAF ELVWKKAESF ELFWKKAEAF ARVWKKAEAF ERFWKKAEAF ERLWKKAEAF ERVWKKAEAL ERVWKKAETF EEVWKKAESF EEVWKKAELF ELVWKKAETF ERIWKKAEAF ALVWKKAEAF ELLWKKAEAF SEVWKKAEAF RLVWKKAEAF ELVWKKAELF ELIWKKAEAF EEFWKKAEAF EEVWKKAEAL EEVWKKAETF EELWKKAEAF AEVWKKAEAF ERVWKKAESF SRVWKKAEAF EEIWKKAEAF ERVWKKAEAY ELVWKKAEAY EEVWKKAEAY RRVWKKAEAF REVWKKAEAF ARVWKKAETF SLVWKKAETF SEFWKKAEAF ALVWKKAEAY ARLWKKAEAF REVWKKAETF SRVWKKAETF SRFWKKAEAF EEIWKKAIAF ERIWKKAEAL ELIWKKAEAL RLVWKKAESF ERLWKKAEAY ERLWKKALAF RRFWKKAEAF ARVWKKAELF AEVWKKAEAY AEVWKKAESF ERIWKKALAF AEIWKKAEAF ELFWKKAVAF ELLWKKAEAL ELIWKKALAF AEVWKKAETF REFWKKAEAF SELWKKAEAF EELWKKALAF RRVWKKAEAL RRVWKKAEAY ARIWKKAEAF RLLWKKAEAF ERIWKKAIAF EELWKKAEAL EEFWKKAVAF SEVWKKAETF ELLWKKALAF AEFWKKAEAF SLIWKKAEAF ELLWKKAEAY ERFWKKAVAF EEIWKKAEAY SRIWKKAEAF ERIWKKAEAY RLVWKKAEAY SEVWKKAELF RRVWKKAETF SLVWKKAELF ELFWKKAEAY SRVWKKAEAL ERLWKKAIAF ARVWKKAESF ERIWKKAVAF EELWKKAIAF REIWKKAEAF SRVWKKAELF ALVWKKAETF REVWKKAEAY SLLWKKAEAF ALLWKKAEAF RLVWKKAETF SLVWKKAEAY SLFWKKAEAF SRVWKKAEAY ALIWKKAEAF ERLWKKAEAL ELFWKKALAF RLFWKKAEAF EEIWKKALAF AEVWKKAEAL RLIWKKAEAF EEFWKKAIAF ELFWKKAIAF RRIWKKAEAF EELWKKAVAF ERFWKKAIAF SEVWKKAEAY AELWKKAEAF ARFWKKAEAF RLVWKKAEAL ELLWKKAVAF RLVWKKAELF ELFWKKAEAL SEIWKKAEAF EELWKKAEAY SEVWKKAESF REVWKKAEAL SRVWKKAESF ELLWKKAIAF RRLWKKAEAF ERFWKKAEAY EEFWKKAEAY ALFWKKAEAF ALVWKKAEAL ERFWKKALAF SLVWKKAEAL SRLWKKAEAF SLVWKKAESF ELIWKKAEAY EEFWKKAEAL AEVWKKAELF EEFWKKALAF EEIWKKAEAL ELIWKKAIAF ERLWKKAVAF RRVWKKAESF REVWKKAELF ARVWKKAEAL ERFWKKAEAL SEVWKKAEAL ELIWKKAVAF ALVWKKAELF ALVWKKAESF ARVWKKAEAY RELWKKAEAF REVWKKAESF RRVWKKAELF EEIWKKAVAF REFWKKAEAL RRFWKKAEAY SLVWPKAELF ARIWKKAEAY AEFWKKAEAY RRVWPKAETF EEIWKKAVAY SLIWKKAEAY SLVWLKAELF ELIWKKAVAY ELLWKKALAL AEVWGKAELF AEIWKKAEAL ALFWKKAEAY RLVWGKAESF ELIWKKAVAL RLVWLKAELF ALVWPKAETF SELWKKAEAL ARVWLKAESF ALVWPKAELF SRVWLKAESF EEFWKKAIAY SEVWLKAETF SRVWLKAETF SEFWKKAEAY ALVWGKAETF AEVWPKAESF ALVWPKAESF ERLWKKAVAY SRIWKKAEAY REIWKKAEAY ARVWGKAELF ERFWKKALAY ELLWKKAIAL ALLWKKAEAL ELIWKKAIAL ARIWKKAEAL ERFWKKAIAY SRVWGKAELF RLVWPKAESF SEVWGKAESF SEFWKKAEAL SRVWGKAESF RRVWGKAELF RRVWPKAELF ALVWGKAESF ERFWKKALAL ERIWKKAVAY RLLWKKAEAY AEVWLKAELF SRIWKKAEAL ARVWPKAETF SLVWGKAELF SEVWGKAETF ARLWKKAEAY SRVWGKAETF ARFWKKAEAL EELWKKAVAY SRLWKKAEAL RRIWKKAEAY REFWKKAEAY ELLWKKALAY ALVWGKAELF SRVWLKAELF ALFWKKAEAL RRLWKKAEAY AEVWLKAETF SRVWPKAETF REIWKKAEAL SELWKKAEAY RLIWKKAEAY ERIWKKAVAL SEIWKKAEAY SRFWKKAEAY AEVWPKAELF ELLWKKAVAY SLFWKKAEAY ERLWKKAVAL RELWKKAEAL ERIWKKAIAL AEIWKKAEAY RRVWGKAETF ERIWKKAIAY ARVWLKAETF ALVWLKAESF REVWLKAETF ALIWKKAEAL RRLWKKAEAL REVWLKAESF ARVWGKAESF SLLWKKAEAY EEFWKKALAL ARVWLKAELF REVWGKAESF SEVWGKAELF AEFWKKAEAL EEFWKKAIAL ERIWKKALAY REVWGKAELF SLVWGKAETF ELFWKKAVAY EELWKKAIAY SRLWKKAEAY RRIWKKAEAL AEVWGKAETF REVWPKAELF REVWLKAELF SEVWLKAESF AEVWPKAETF AEVWLKAESF ELIWKKALAL RLVWPKAELF RLVWGKAETF RRFWKKAEAL ERLWKKAIAY RRVWGKAESF SRVWPKAESF ELFWKKAIAL RRVWLKAESF SEVWLKAELF SEVWPKAELF EELWKKALAY SLLWKKAEAL RLIWKKAEAL SLVWGKAESF SEVWPKAETF ERLWKKALAY ALLWKKAEAY SLVWLKAETF SEVWPKAESF ERFWKKAIAL ELLWKKAIAY EEIWKKAVAL ARVWPKAESF RLFWKKAEAL RRVWLKAETF AELWKKAEAL EEIWKKAIAL ELLWKKAVAL AEVWGKAESF ALVWLKAELF ARFWKKAEAY REVWPKAETF ELFWKKALAL ALIWKKAEAY ALVWLKAETF SEIWKKAEAL ELIWKKALAY ERIWKKALAL RRVWPKAESF SLIWKKAEAL ERLWKKALAL RLVWGKAELF RLVWPKAETF EEIWKKAIAY RLLWKKAEAL EELWKKALAL SRFWKKAEAL REVWGKAETF ERLWKKAIAL RLVWLKAESF ELFWKKALAY AELWKKAEAY ELFWKKAIAY ELIWKKAIAY RRVWLKAELF ERFWKKAVAL EEIWKKALAY EEFWKKAVAY ELFWKKAVAL SRVWPKAELF SLFWKKAEAL ERFWKKAVAY RLFWKKAEAY SLVWPKAESF EELWKKAVAL REVWPKAESF EEIWKKALAL ARLWKKAEAL ARVWPKAELF ARVWGKAETF SLVWPKAETF EELWKKAIAL SLVWLKAESF EEFWKKALAY RLVWLKAETF EEFWKKAVAL RELWKKAEAY

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 370

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | GVWKKAEAFI → # Mutation peptides = 369

If you want to use IEDB tools to predict IC50, please use these format:

GVWKKAEAFI GVWKKAEAFL SVWKKAEAFI GEWKKAEAFI RVWKKAEAFI GLWKKAEAFI GRWKKAEAFI GVWKKAEAFY GVWKKAEAFF AVWKKAEAFI SLWKKAEAFI GEWKKAEATI GEWKKAEAFL SEWKKAEAFI GLWKKAEALI AVWKKAEAFY RRWKKAEAFI GLWKKAEASI SRWKKAEAFI RLWKKAEAFI GLWKKAEAFY ARWKKAEAFI REWKKAEAFI SVWKKAEAFL GEWKKAEAFY GRWKKAEATI GEWKKAEALI SVWKKAEAFY GLWKKAEATI GRWKKAEAFL SVWKKAEAFF RVWKKAEAFL GLWKKAEAFF RVWKKAEAFF RVWKKAEAFY GLWKKAEAFL GEWKKAEAFF GEWKKAEASI AEWKKAEAFI GRWKKAEALI GRWKKAEASI AVWKKAEAFF GRWKKAEAFY AVWKKAEAFL GRWKKAEAFF ALWKKAEAFI RRWKKAEATI GRIKKAEAFY ARWKKAEASI REWKKAEAFF GELKKAEAFF GRIKKAEAFF GRLKKAEAFY REWKKAEAFY GRFKKAEAFL GLLKKAEAFF ARWKKAEAFY RRWKKAEAFL AEWKKAEAFL GEIKKAEAFL SEWKKAEAFL SEWKKAEAFY GLFKKAEAFF AEWKKAEASI RRWKKAEAFY GELKKAEAFL ARWKKAEAFL REWKKAEASI GLFKKAEAFL GEFKKAEAFL GRIKKAEAFL SRWKKAEAFF ALWKKAEAFL AEWKKAEAFY SEWKKAEALI RLWKKAEAFL RLWKKAEASI SLWKKAEAFF SEWKKAEASI RRWKKAEASI REWKKAEAFL AEWKKAEALI ALWKKAEATI RLWKKAEATI RLWKKAEAFY AEWKKAEATI GRLKKAEAFF RRWKKAEAFF SLWKKAEASI GELKKAEAFY GLLKKAEAFL GLIKKAEAFY SRWKKAEATI GEIKKAEAFF SLWKKAEATI ARWKKAEAFF SRWKKAEAFY ALWKKAEASI GEFKKAEAFY ARWKKAEATI GLLKKAEAFY SEWKKAEATI GEFKKAEAFF GLFKKAEAFY ALWKKAEAFF RLWKKAEALI RRWKKAEALI GEIKKAEAFY SLWKKAEAFY ALWKKAEALI SRWKKAEASI SLWKKAEALI REWKKAEALI GRFKKAEAFF GRFKKAEAFY GRLKKAEAFL ALWKKAEAFY AEWKKAEAFF SRWKKAEAFL SRWKKAEALI GLIKKAEAFL SEWKKAEAFF ARWKKAEALI GLIKKAEAFF RLWKKAEAFF SLWKKAEAFL REWKKAEATI RLFKKAEAFY RLWKKAEATF SLWKKAEATF SLIKKAEAFL ARFKKAEAFL GLFKKAEIFL GRFKKAEIFL SLWKKAEATL GRLKKAEIFL GLIKKAEIFF AEWKKAEATL AEWKKAEASL GRLKKAEVFL GLLKKAELFF GRLKKAEIFY ALFKKAEAFY RLLKKAEAFF ARWKKAEASL RRWKKAEATY SLWKKAEALY GRLKKAEIFF REFKKAEAFY RLWKKAEASL REWKKAEASL GELKKAELFL RRFKKAEAFY GRFKKAELFL ARLKKAEAFF RLLKKAEAFL RLWKKAEALF GLLKKAEIFF GRIKKAEVFL GELKKAEVFF GLIKKAEVFY GRFKKAEIFF GRLKKAEVFF ALWKKAEATL RLWKKAEASF SEFKKAEAFY SEWKKAEASY GELKKAELFF SEWKKAEATL SRFKKAEAFL REFKKAEAFL GRIKKAEIFF SRWKKAEALY RLWKKAEASY GRFKKAEVFF ALWKKAEATY RRFKKAEAFF SLFKKAEAFF GRIKKAELFY RLWKKAEALL GLFKKAELFY AEIKKAEAFF ARWKKAEALL ARLKKAEAFL ARWKKAEATF GEIKKAELFF SRWKKAEASF GRLKKAEVFY AEWKKAEASY AEIKKAEAFL ARFKKAEAFY AEWKKAEALL GLFKKAEVFY ARWKKAEATY GLLKKAEIFL GRFKKAEIFY SLIKKAEAFF AEWKKAEALF GRIKKAEIFL REWKKAEALF SELKKAEAFY SLLKKAEAFY ALIKKAEAFF RRLKKAEAFY GEFKKAELFL ARIKKAEAFF SELKKAEAFF SLFKKAEAFL GRIKKAELFL SRFKKAEAFF RRWKKAEATF GLLKKAEVFF SLWKKAEALF SRWKKAEALL ARWKKAEASF ARIKKAEAFL ARWKKAEALY GRFKKAELFF RRWKKAEALL GRLKKAELFL RRIKKAEAFL ALFKKAEAFL GELKKAELFY ALIKKAEAFL RRWKKAEATL AELKKAEAFF SRWKKAEASY GRFKKAEVFY ALWKKAEALF SEIKKAEAFY RRWKKAEASF GEFKKAEVFL GLIKKAEIFY RLFKKAEAFL ALLKKAEAFF AEFKKAEAFF SRWKKAEATF REIKKAEAFY GRIKKAEVFF GLIKKAELFY RLIKKAEAFF GEIKKAEIFY AEWKKAEATF GLIKKAELFF REWKKAEATL GEFKKAEVFF GRIKKAELFF SRIKKAEAFF GEFKKAEIFY GRLKKAELFF SEIKKAEAFF GEIKKAEVFL RLWKKAEATY SRWKKAEALF GLLKKAEVFL AELKKAEAFL ALWKKAEASL ARWKKAEALF GLLKKAELFL GRIKKAEIFY RRIKKAEAFY GLLKKAELFY GLFKKAEVFF RLWKKAEALY SLWKKAEATY GELKKAEIFL SLFKKAEAFY RLIKKAEAFL SLWKKAEASL REWKKAEALY REIKKAEAFL GEIKKAEVFF ALWKKAEALY SEWKKAEALF SRLKKAEAFL REIKKAEAFF ALWKKAEASY SLWKKAEALL RRIKKAEAFF AEIKKAEAFY GLIKKAEIFL GLFKKAEIFY AEFKKAEAFL GRIKKAEVFY ALWKKAEATF GEFKKAEIFF GEIKKAELFY SEFKKAEAFL GEFKKAELFY REWKKAEASY REWKKAEATY GEFKKAEVFY RELKKAEAFF SEWKKAEALY GEFKKAEIFL SRWKKAEATL ARIKKAEAFY RRFKKAEAFL GEIKKAEIFL GELKKAEVFL ALLKKAEAFL AEFKKAEAFY REFKKAEAFF RELKKAEAFY RLLKKAEAFY RRWKKAEASY GELKKAEIFY REWKKAEATF RRWKKAEASL ARWKKAEASY ALWKKAEALL GEIKKAEVFY SELKKAEAFL REWKKAEASF REWKKAEALL GEFKKAELFF RRWKKAEALF RELKKAEAFL SLWKKAEASY GLFKKAEVFL SEWKKAEATF SRWKKAEATY SLLKKAEAFL GLIKKAELFL ARLKKAEAFY SEIKKAEAFL GRFKKAEVFL SLIKKAEAFY GLFKKAEIFF GEIKKAEIFF AEWKKAEATY GEIKKAELFL GLFKKAELFF SLLKKAEAFF GLLKKAEIFY SRLKKAEAFF GRLKKAELFY RLFKKAEAFF GLIKKAEVFL SRFKKAEAFY SEWKKAEASL RLIKKAEAFY SEWKKAEATY SEWKKAEALL GRFKKAELFY ALIKKAEAFY GLFKKAELFL GLIKKAEVFF GELKKAEIFF SEWKKAEASF SRIKKAEAFL ALLKKAEAFY SRLKKAEAFY AEWKKAEALY SLWKKAEASF AELKKAEAFY AEWKKAEASF GLLKKAEVFY RRLKKAEAFL ARFKKAEAFF RRLKKAEAFF GELKKAEVFY ALWKKAEASF RRWKKAEALY SRIKKAEAFY ARWKKAEATL RLWKKAEATL SRWKKAEASL SEFKKAEAFF ALFKKAEAFF

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 370

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | VWKKAEAFIQ → # Mutation peptides = 369

If you want to use IEDB tools to predict IC50, please use these format:

VWKKAEAFIQ VWKKAEAFIY RWKKAEAFIQ AWKKAEAFIQ VLKKAEAFIQ VWKKAEAFIL SWKKAEAFIQ VRKKAEAFIQ VWKKAEAFIF VEKKAEAFIQ SEKKAEAFIQ SWKKAEAFIY RWKKAEAFIF AWKKAEAFIY RWKKAEAFIY VLKKAEAFSQ ARKKAEAFIQ RWKKAEAFIL VEKKAEAFLQ VRKKAEAFIL VEKKAEAFSQ ALKKAEAFIQ VRKKAEAFIF VRKKAEAFSQ AWKKAEAFIL SWKKAEAFIF SWKKAEAFIL AEKKAEAFIQ VLKKAEAFIF REKKAEAFIQ VRKKAEAFLQ VEKKAEAFIL AWKKAEAFIF VEKKAEAFIF RLKKAEAFIQ SRKKAEAFIQ VLKKAEAFIL VLKKAEAFLQ VEKKAEAFIY SLKKAEAFIQ VEKKAEAFTQ RRKKAEAFIQ VRKKAEAFTQ VRKKAEAFIY VLKKAEAFTQ VLKKAEAFIY RRKKAEAFTQ REKKAEAFIF RLKKAEAFSQ REKKAEAFSQ VEIKAEAFIF VELKAEAFIL SRKKAEAFIY SLKKAEAFIL SRKKAEAFIF RLKKAEAFIF RRKKAEAFIY ALKKAEAFLQ REKKAEAFIY AEKKAEAFSQ SLKKAEAFLQ ARKKAEAFLQ SLKKAEAFIY VRFKAEAFIF ARKKAEAFTQ VRLKAEAFIY VRFKAEAFIY REKKAEAFTQ VLLKAEAFIY ALKKAEAFIF ARKKAEAFIF ARKKAEAFIY VLLKAEAFIL RRKKAEAFIL SEKKAEAFTQ VELKAEAFIY VEIKAEAFIL REKKAEAFLQ SEKKAEAFIL VEIKAEAFIY AEKKAEAFIY SRKKAEAFTQ AEKKAEAFIL VLFKAEAFIF SLKKAEAFSQ VLFKAEAFIL RLKKAEAFLQ VLLKAEAFIF ARKKAEAFSQ ALKKAEAFIL SRKKAEAFLQ ALKKAEAFSQ RRKKAEAFLQ RLKKAEAFIY RLKKAEAFTQ VEFKAEAFIF RRKKAEAFSQ AEKKAEAFIF VLIKAEAFIL VLFKAEAFIY SEKKAEAFIY AEKKAEAFLQ VEFKAEAFIL VRIKAEAFIF ALKKAEAFTQ SEKKAEAFIF ARKKAEAFIL SLKKAEAFTQ SEKKAEAFLQ VRLKAEAFIL AEKKAEAFTQ SRKKAEAFIL VRFKAEAFIL VLIKAEAFIY SEKKAEAFSQ RLKKAEAFIL ALKKAEAFIY VELKAEAFIF RRKKAEAFIF REKKAEAFIL VEFKAEAFIY VLIKAEAFIF SRKKAEAFSQ VRIKAEAFIY VRIKAEAFIL SLKKAEAFIF VRLKAEAFIF RLIKAEAFLQ REFKAEAFIY ARIKAEAFTQ SEIKAEAFTQ SEFKAEAFSQ VLFKAEAIIF VLFKAEAVIL REIKAEAFLQ VLLKAEAVIY SLFKAEAFIF RRIKAEAFIY ARIKAEAFLQ VEIKAEAVIF VEIKAEAVIL REIKAEAFIL SLFKAEAFTQ SRFKAEAFIL AELKAEAFIY VRLKAEAIIF AEFKAEAFSQ ARFKAEAFIY VELKAEAVIL VLIKAEALIY VRIKAEAVIF ALLKAEAFIF RRFKAEAFIL VLLKAEALIL ARFKAEAFIL SLFKAEAFIY REIKAEAFIY ARLKAEAFIL ALLKAEAFTQ RELKAEAFIF VRFKAEAVIF ARIKAEAFIL VLFKAEAVIY AEIKAEAFTQ AEFKAEAFLQ RRLKAEAFIL RLFKAEAFIY SRIKAEAFSQ REFKAEAFIL VRFKAEAVIY RELKAEAFTQ ALLKAEAFSQ REIKAEAFIF SLIKAEAFLQ ALIKAEAFIY SRLKAEAFTQ RLLKAEAFIF SRLKAEAFIY ALIKAEAFLQ SELKAEAFIF RLLKAEAFSQ AELKAEAFIL SLLKAEAFIL VLIKAEAVIL VRLKAEAIIY ALFKAEAFIL VEFKAEAVIF SRLKAEAFLQ VELKAEAVIF SELKAEAFSQ VLIKAEAIIF VELKAEAIIL VRFKAEALIL VLFKAEALIF SLIKAEAFTQ VLFKAEALIL RELKAEAFLQ ARFKAEAFIF VLIKAEAIIY VEFKAEAIIF AELKAEAFLQ VRLKAEALIY SEFKAEAFLQ VEFKAEALIL RRFKAEAFIF AELKAEAFTQ SRIKAEAFTQ RRFKAEAFTQ VLIKAEAVIY VRLKAEAVIL SRFKAEAFSQ RELKAEAFIL SRIKAEAFIY VLFKAEAVIF VRLKAEAVIY SELKAEAFIY SLFKAEAFLQ VELKAEALIL RLIKAEAFIF VRIKAEALIY ALIKAEAFSQ VEFKAEALIF SELKAEAFLQ SRFKAEAFIF VRIKAEAIIF AEIKAEAFIY VLIKAEALIF VELKAEAIIY RLLKAEAFTQ RRIKAEAFLQ VRFKAEAVIL VRFKAEALIY REIKAEAFTQ SRFKAEAFIY SLLKAEAFSQ REIKAEAFSQ SLIKAEAFIF RLFKAEAFSQ RRLKAEAFIF VEIKAEALIL VRIKAEAVIL RLIKAEAFSQ SLIKAEAFIL SLIKAEAFSQ REFKAEAFSQ RRLKAEAFLQ VELKAEAVIY ARLKAEAFIF ALIKAEAFIF SEFKAEAFIL SEIKAEAFIL ALFKAEAFLQ SRFKAEAFTQ SLFKAEAFSQ VLFKAEALIY VRIKAEALIL RLIKAEAFTQ SRLKAEAFIF AEIKAEAFLQ ARLKAEAFTQ AELKAEAFIF VELKAEALIF RLLKAEAFLQ AEFKAEAFTQ VRFKAEAIIL SLLKAEAFTQ ALIKAEAFIL VEIKAEALIY VLLKAEALIF RELKAEAFSQ VEFKAEAVIL VRIKAEAVIY RELKAEAFIY VLIKAEAIIL SLIKAEAFIY ALFKAEAFIY SLLKAEAFIY SEFKAEAFIY ARFKAEAFLQ RRLKAEAFSQ SLLKAEAFLQ SELKAEAFTQ SLLKAEAFIF RRIKAEAFIF VLIKAEAVIF AELKAEAFSQ SLFKAEAFIL RLIKAEAFIL VRLKAEAVIF REFKAEAFTQ ARIKAEAFIF RLLKAEAFIY ARLKAEAFIY SRLKAEAFSQ ARIKAEAFSQ VLIKAEALIL VEIKAEAIIY VLLKAEAVIF RRIKAEAFIL VEFKAEAVIY VLLKAEAIIL SEIKAEAFIY VRIKAEALIF ALIKAEAFTQ SRFKAEAFLQ SRIKAEAFIF SEIKAEAFLQ ALLKAEAFIL ARIKAEAFIY ARLKAEAFSQ SEFKAEAFIF ALFKAEAFSQ REFKAEAFIF RRIKAEAFTQ VELKAEAIIF VLLKAEALIY SELKAEAFIL VLLKAEAIIF AEIKAEAFSQ RLLKAEAFIL VEFKAEALIY RLFKAEAFLQ ALLKAEAFIY VEIKAEAIIL RRFKAEAFSQ RLFKAEAFIL ARFKAEAFSQ REFKAEAFLQ SRLKAEAFIL VRIKAEAIIY AEFKAEAFIL VLFKAEAIIY VLFKAEAIIL VEFKAEAIIY AEIKAEAFIL VLLKAEAVIL VRFKAEALIF VEFKAEAIIL VEIKAEAIIF VEIKAEALIF RLFKAEAFTQ VEIKAEAVIY VRFKAEAIIF VRLKAEALIL ALFKAEAFTQ ARLKAEAFLQ SRIKAEAFIL SRIKAEAFLQ RLIKAEAFIY VELKAEALIY RRLKAEAFIY SEFKAEAFTQ AEFKAEAFIY ALLKAEAFLQ AEFKAEAFIF VRLKAEAIIL RRIKAEAFSQ RLFKAEAFIF RRFKAEAFIY RRFKAEAFLQ RRLKAEAFTQ VRLKAEALIF VRFKAEAIIY ARFKAEAFTQ AEIKAEAFIF SEIKAEAFSQ VLLKAEAIIY VRIKAEAIIL ALFKAEAFIF SEIKAEAFIF

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 307

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | WKKAEAFIQP → # Mutation peptides = 306

If you want to use IEDB tools to predict IC50, please use these format:

WKKAEAFIQP WKKAEAFIQL WKKAEAFIQY WEKAEAFIQP WRKAEAFIQP SKKAEAFIQP WLKAEAFIQP RKKAEAFIQP AKKAEAFIQP WKKAEAFIQF ARKAEAFIQP WLKAEAFIQY WLKAEAFIQF SEKAEAFIQP WRKAEAFILP WLKAEAFIQL WEKAEAFIQF RRKAEAFIQP WLKAEAFILP WRKAEAFIQY SRKAEAFIQP WLKAEAFISP ALKAEAFIQP WEKAEAFIQL WEKAEAFILP AEKAEAFIQP SLKAEAFIQP WEKAEAFITP WRKAEAFIQF RLKAEAFIQP WEKAEAFIQY WRKAEAFISP REKAEAFIQP WEKAEAFISP WRKAEAFIQL WRKAEAFITP WLKAEAFITP WLFAEAFIQL WEIAEAFIQL SLKAEAFILP WLIAEAFIQY ARKAEAFITP RRKAEAFITP REKAEAFIQY ARKAEAFIQF WLLAEAFIQL RLKAEAFIQF WRFAEAFIQL WEIAEAFIQF SEKAEAFITP WRLAEAFIQY SRKAEAFIQL WELAEAFIQL WLFAEAFIQF REKAEAFISP SRKAEAFITP SEKAEAFIQF SLKAEAFISP WLLAEAFIQF SLKAEAFITP WRFAEAFIQY ALKAEAFILP RLKAEAFIQY RRKAEAFIQY RLKAEAFILP AEKAEAFITP SLKAEAFIQF SLKAEAFIQY ARKAEAFIQL SEKAEAFIQL REKAEAFITP SRKAEAFIQF ALKAEAFIQL SLKAEAFIQL WLIAEAFIQL WRLAEAFIQF WRFAEAFIQF SEKAEAFILP AEKAEAFIQL RRKAEAFIQL ARKAEAFILP SRKAEAFILP WEIAEAFIQY AEKAEAFIQF WRIAEAFIQL WEFAEAFIQF REKAEAFILP ARKAEAFIQY ALKAEAFITP WLLAEAFIQY RLKAEAFIQL WLIAEAFIQF WRIAEAFIQY ALKAEAFIQY AEKAEAFISP ALKAEAFIQF RLKAEAFISP AEKAEAFILP REKAEAFIQL WLFAEAFIQY WRIAEAFIQF ARKAEAFISP RRKAEAFIQF RRKAEAFISP SEKAEAFISP RRKAEAFILP WELAEAFIQF WEFAEAFIQY REKAEAFIQF RLKAEAFITP SEKAEAFIQY ALKAEAFISP SRKAEAFIQY AEKAEAFIQY WRLAEAFIQL WEFAEAFIQL SRKAEAFISP WELAEAFIQY ALKAEAFLTP WEFAEAFVQL ALFAEAFIQL ALLAEAFIQL WRFAEAFLQL ARIAEAFIQY SEFAEAFIQF RRFAEAFIQL ARFAEAFIQL RLIAEAFIQL WLLAEAFLQF ARKAEAFVTP ARKAEAFVSP WEIAEAFVQL SELAEAFIQY WLLAEAFVQF SLFAEAFIQF ALKAEAFLSP SLIAEAFIQF SEKAEAFVSP ARKAEAFLLP WRFAEAFLQY ARFAEAFIQF WRIAEAFVQL RRIAEAFIQY SEKAEAFVLP SELAEAFIQF WLIAEAFVQF SRKAEAFVTP SLIAEAFIQL REIAEAFIQL RRFAEAFIQY WRIAEAFVQY WRIAEAFLQL WLLAEAFLQL SEKAEAFLLP RRKAEAFVLP SLIAEAFIQY RELAEAFIQL WRFAEAFLQF WEFAEAFVQF ARIAEAFIQL WLFAEAFLQF WLFAEAFLQL RLLAEAFIQF ALFAEAFIQF SRLAEAFIQL SRKAEAFLTP SRLAEAFIQF RRKAEAFVSP WRFAEAFVQF SEKAEAFLTP ARFAEAFIQY WLLAEAFLQY REIAEAFIQF SLKAEAFLTP WLFAEAFLQY RLKAEAFVTP ALKAEAFVSP SLLAEAFIQF ARKAEAFLTP REFAEAFIQL SEFAEAFIQY ALKAEAFVTP SEKAEAFVTP AEKAEAFVLP RRFAEAFIQF ARIAEAFIQF AELAEAFIQF WLFAEAFVQF AEFAEAFIQL RRLAEAFIQL SLKAEAFVLP RLKAEAFLTP WEFAEAFLQY RELAEAFIQY ARLAEAFIQL WRLAEAFLQF REKAEAFLLP ARLAEAFIQY AEIAEAFIQY SLFAEAFIQL RLLAEAFIQY ALLAEAFIQF WRFAEAFVQY AEKAEAFLSP SLKAEAFLSP RRIAEAFIQF RLKAEAFLLP SRLAEAFIQY WRIAEAFLQF WLLAEAFVQL RRLAEAFIQY SRKAEAFLLP RELAEAFIQF RLIAEAFIQF WELAEAFLQF AELAEAFIQL ALKAEAFLLP WEIAEAFLQL ARLAEAFIQF AEKAEAFVSP AEKAEAFLLP SRFAEAFIQL WEIAEAFVQY WELAEAFVQY WRLAEAFVQF SEFAEAFIQL SLLAEAFIQL WELAEAFVQF WRLAEAFVQL ARKAEAFLSP RLFAEAFIQF WLFAEAFVQY WELAEAFLQY SLKAEAFLLP SRIAEAFIQF SRIAEAFIQY WELAEAFLQL WEIAEAFVQF RLKAEAFVSP WEIAEAFLQF SEKAEAFLSP WRIAEAFVQF ALKAEAFVLP ALFAEAFIQY WRIAEAFLQY RRKAEAFLTP SEIAEAFIQL SLKAEAFVSP RLKAEAFVLP SEIAEAFIQY SLKAEAFVTP SLLAEAFIQY ALLAEAFIQY WLLAEAFVQY REKAEAFVLP RRKAEAFVTP ARKAEAFVLP WLIAEAFVQL SEIAEAFIQF RLKAEAFLSP SELAEAFIQL WEIAEAFLQY WEFAEAFVQY RLFAEAFIQL SRFAEAFIQY WEFAEAFLQF ALIAEAFIQF AEIAEAFIQF REKAEAFVTP SRFAEAFIQF AEKAEAFVTP SRKAEAFVLP AELAEAFIQY SLFAEAFIQY RRIAEAFIQL WRFAEAFVQL WELAEAFVQL REKAEAFLTP WLIAEAFLQL WLIAEAFLQY WLIAEAFLQF REKAEAFLSP RLFAEAFIQY RLIAEAFIQY RRLAEAFIQF REKAEAFVSP REFAEAFIQF AEKAEAFLTP AEFAEAFIQY AEFAEAFIQF ALIAEAFIQL WEFAEAFLQL SRKAEAFLSP SRKAEAFVSP WLIAEAFVQY RRKAEAFLLP WRLAEAFLQL SRIAEAFIQL ALIAEAFIQY WLFAEAFVQL REFAEAFIQY RLLAEAFIQL WRLAEAFLQY RRKAEAFLSP REIAEAFIQY AEIAEAFIQL WRLAEAFVQY

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 361

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | KKAEAFIQPI → # Mutation peptides = 360

If you want to use IEDB tools to predict IC50, please use these format:

KKAEAFIQPI KKAEAFIQPF KEAEAFIQPI SKAEAFIQPI RKAEAFIQPI KKAEAFIQPY AKAEAFIQPI KKAEAFIQPL KLAEAFIQPI KRAEAFIQPI ALAEAFIQPI KLAEAFIQTI KLAEAFIQLI KEAEAFIQPF KEAEAFIQLI AEAEAFIQPI KEAEAFIQPL KLAEAFIQSI KRAEAFIQPY KLAEAFIQPF REAEAFIQPI KEAEAFIQSI KRAEAFIQPL SRAEAFIQPI KEAEAFIQPY KEAEAFIQTI KRAEAFIQLI KRAEAFIQPF SLAEAFIQPI KRAEAFIQTI RRAEAFIQPI KLAEAFIQPY ARAEAFIQPI KRAEAFIQSI RLAEAFIQPI SEAEAFIQPI KLAEAFIQPL RRAEAFIQPY RLAEAFIQLI KLLEAFIQPL SLAEAFIQTI RRAEAFIQSI KRFEAFIQPL REAEAFIQPF AEAEAFIQPY ARAEAFIQLI SEAEAFIQPY KLFEAFIQPY RRAEAFIQPL SLAEAFIQPL ARAEAFIQPY KRFEAFIQPY SLAEAFIQLI SRAEAFIQTI RRAEAFIQPF ALAEAFIQPL ARAEAFIQTI REAEAFIQPL KRIEAFIQPL KRLEAFIQPF KELEAFIQPF KRFEAFIQPF RRAEAFIQTI KEFEAFIQPF KLFEAFIQPF SEAEAFIQPF KEIEAFIQPY ARAEAFIQPL KEFEAFIQPL KLIEAFIQPY KELEAFIQPY SRAEAFIQLI ALAEAFIQPY SRAEAFIQPF SRAEAFIQPL SLAEAFIQSI RLAEAFIQTI SEAEAFIQSI SEAEAFIQTI SLAEAFIQPF SLAEAFIQPY SEAEAFIQPL REAEAFIQPY SRAEAFIQSI RRAEAFIQLI RLAEAFIQPL AEAEAFIQTI KEIEAFIQPL KLIEAFIQPL RLAEAFIQPY SRAEAFIQPY ARAEAFIQPF SEAEAFIQLI KLLEAFIQPF REAEAFIQTI ALAEAFIQPF ALAEAFIQSI REAEAFIQSI AEAEAFIQPL ALAEAFIQTI AEAEAFIQLI RLAEAFIQPF KRLEAFIQPL RLAEAFIQSI KRLEAFIQPY REAEAFIQLI ARAEAFIQSI KRIEAFIQPY AEAEAFIQPF KLIEAFIQPF AEAEAFIQSI KEIEAFIQPF KELEAFIQPL KRIEAFIQPF KEFEAFIQPY ALAEAFIQLI KLFEAFIQPL KLLEAFIQPY AEAEAFIQSY RLLEAFIQPY SRAEAFIQSL KLLEAFIVPY RRAEAFIQLY KEIEAFIVPL KELEAFIVPF KLLEAFIIPY SEAEAFIQLL ARAEAFIQTF REAEAFIQLY SEFEAFIQPL AEAEAFIQSF SEAEAFIQSY SLAEAFIQTL KEIEAFILPF SLIEAFIQPY SEAEAFIQTY RLAEAFIQTL RELEAFIQPF SLLEAFIQPL AEIEAFIQPY SEAEAFIQTL KLFEAFILPF SELEAFIQPY SELEAFIQPL AEAEAFIQLL AEAEAFIQLF KRLEAFIIPL RLLEAFIQPL SLFEAFIQPY KLFEAFILPY AEAEAFIQTY REAEAFIQLL REFEAFIQPL REIEAFIQPL RRFEAFIQPL ALAEAFIQSY RLAEAFIQSF KRFEAFILPY RRAEAFIQTY KELEAFIVPY KRLEAFIVPY RRAEAFIQSY RRIEAFIQPF RRAEAFIQTL KRFEAFIVPL KRFEAFIIPY KLFEAFIVPL KLFEAFIVPF SRAEAFIQLL RRFEAFIQPF KLLEAFIVPF SLAEAFIQLF SRFEAFIQPF SLAEAFIQSF REAEAFIQSL ALLEAFIQPF RRLEAFIQPL SLLEAFIQPY KRFEAFILPL ARIEAFIQPY KLFEAFIIPY RRAEAFIQSF RRAEAFIQTF ALIEAFIQPY KEIEAFIVPF SRLEAFIQPL RLAEAFIQLF AEAEAFIQLY KLFEAFILPL KEFEAFIVPF RRLEAFIQPF SLFEAFIQPF SRAEAFIQSF RELEAFIQPY RLFEAFIQPF RLIEAFIQPL ARFEAFIQPY KEIEAFIVPY RRIEAFIQPL KLLEAFILPL SLAEAFIQTY SLIEAFIQPL RRAEAFIQLL KLFEAFIVPY KLIEAFIIPF RRLEAFIQPY KEFEAFIVPY SLAEAFIQSY KRLEAFILPL KEFEAFILPF ALIEAFIQPF SRFEAFIQPY ALAEAFIQTY SRAEAFIQTL AEAEAFIQTL ARLEAFIQPF RELEAFIQPL AEFEAFIQPL SLAEAFIQLY SEAEAFIQLF KLIEAFIVPY KLIEAFIIPL ARAEAFIQLY ALAEAFIQLF KLLEAFIVPL SEAEAFIQTF REFEAFIQPF SRLEAFIQPY SRAEAFIQTY ARFEAFIQPF KRFEAFIIPL ALFEAFIQPL ARAEAFIQSL RLAEAFIQTF SEIEAFIQPL RLAEAFIQSY KEIEAFIIPF SLLEAFIQPF KRLEAFILPY ALAEAFIQLL RLAEAFIQLY ALLEAFIQPL SRIEAFIQPL SELEAFIQPF KLIEAFIIPY ARLEAFIQPY ALAEAFIQTL ALLEAFIQPY RLIEAFIQPY KEIEAFILPY RLIEAFIQPF KEFEAFIIPY ARAEAFIQSY KRIEAFILPF RLFEAFIQPY KLIEAFILPL SEFEAFIQPF ARIEAFIQPF KELEAFIIPF ARAEAFIQTL REAEAFIQSF KRIEAFILPL RLAEAFIQSL AELEAFIQPY KRFEAFIVPY KLIEAFIVPF SLAEAFIQTF AEIEAFIQPF KRFEAFIIPF AEAEAFIQSL REIEAFIQPY ARLEAFIQPL SRAEAFIQSY KRLEAFIVPF RRFEAFIQPY KELEAFILPF ALAEAFIQTF KELEAFILPY KRLEAFIIPY ALAEAFIQLY KLLEAFIIPF SLIEAFIQPF KRIEAFIVPY SEFEAFIQPY RLAEAFIQLL KEIEAFIIPY SRIEAFIQPY KRIEAFIVPF SEIEAFIQPF REAEAFIQTY AEIEAFIQPL KELEAFIVPL KRIEAFILPY ARAEAFIQTY REIEAFIQPF KRLEAFIIPF SLFEAFIQPL KRLEAFILPF KEFEAFILPY KELEAFIIPY KLFEAFIIPL SRFEAFIQPL ALFEAFIQPF RLFEAFIQPL REAEAFIQLF ARFEAFIQPL RRIEAFIQPY KLLEAFILPF SRIEAFIQPF ARAEAFIQLF KLIEAFILPY KEFEAFIVPL KLFEAFIIPF ALAEAFIQSL KRLEAFIVPL KRIEAFIIPY REFEAFIQPY AEFEAFIQPF KRIEAFIIPL SLAEAFIQLL ARIEAFIQPL AELEAFIQPF SEAEAFIQLY KEFEAFIIPF ALIEAFIQPL KLLEAFIIPL KEIEAFIIPL KEFEAFILPL KRIEAFIVPL KRIEAFIIPF KELEAFIIPL KLIEAFILPF AEAEAFIQTF ALAEAFIQSF AELEAFIQPL KELEAFILPL SLAEAFIQSL KRFEAFILPF KLIEAFIVPL SRLEAFIQPF KRFEAFIVPF RLLEAFIQPF ARAEAFIQSF SRAEAFIQLF KEIEAFILPL SEAEAFIQSL KLLEAFILPY SRAEAFIQLY RRAEAFIQSL SRAEAFIQTF RLAEAFIQTY ALFEAFIQPY REAEAFIQTL RRAEAFIQLF SEAEAFIQSF SEIEAFIQPY AEFEAFIQPY REAEAFIQTF KEFEAFIIPL REAEAFIQSY ARAEAFIQLL

No HLA-A\*11:01 with 9, Use the overall attention for pepAAtype-peppsition

# Samples = 448

\*\*\*\*\*\*\*\*\*\* HLA-A\*11:01 | EAFIQPITR → # Mutation peptides = 447

If you want to use IEDB tools to predict IC50, please use these format:

EAFIQPITR EAFIQPITF EAFIQPITL SAFIQPITR AAFIQPITR EAFIQPITY RAFIQPITR EAFDQPITF EEFIQPITF EAFPQPITY REFIQPITR ELFIQPITL RLFIQPITR EEFIQPITL AAFIQPITL ALFIQPITR AEFIQPITR EAFEQPITF ELFIQPITF RRFIQPITR EEFIQPITY RAFIQPITY ERFIQPITY EAFPQPITF EAFPQPITL ERFIQPITL SAFIQPITY ARFIQPITR AAFIQPITF EAFDQPITL SAFIQPITF SAFIQPITL SLFIQPITR EAFEQPITY EAFEQPITL RAFIQPITF ERFIQPITF RAFIQPITL SEFIQPITR ELFIQPITY EAFDQPITY SRFIQPITR AAFIQPITY EEFEQPITF AELIQPITR ELFEQPITY EEFDQPITY AAFDQPITY ARFIQPITL SLAIQPITR AEFIQPITL AAFPQPITL RAFDQPITY ALFIQPITY SLFIQPITY SEDIQPITR AEAIQPITR EEFDQPITF EEFEQPITL SRFIQPITY EEFDQPITL SEAIQPITR AAFPQPITY SLFIQPITF ERFEQPITL RLAIQPITR SAFPQPITY EEFPQPITY SAFEQPITF ELFDQPITF ELFPQPITL ALFIQPITL RAFEQPITF SEFIQPITL SLFIQPITL ARAIQPITR SAFDQPITF SRFIQPITL AAFPQPITF SRDIQPITR ERFDQPITY RELIQPITR ARFIQPITY SRLIQPITR SEFIQPITY RRFIQPITL ERFDQPITF RRFIQPITY RAFPQPITF SEFIQPITF ERFPQPITY ARLIQPITR ALDIQPITR SAFEQPITY EEFPQPITL ERFEQPITY SAFPQPITF SLDIQPITR ALFIQPITF EEFEQPITY SAFDQPITL ELFDQPITL EEFPQPITF ELFEQPITL SLLIQPITR ELFDQPITY AAFDQPITL RAFEQPITL RRLIQPITR ERFDQPITL SELIQPITR ARFIQPITF SRFIQPITF AAFEQPITL ALLIQPITR RLLIQPITR REDIQPITR ELFPQPITF RRDIQPITR ELFEQPITF REAIQPITR RAFPQPITY RRFIQPITF RLDIQPITR AAFEQPITF SAFPQPITL RAFEQPITY AEFIQPITF ALAIQPITR REFIQPITY AEFIQPITY ARDIQPITR REFIQPITF RAFDQPITL SAFEQPITL RAFPQPITL REFIQPITL SRAIQPITR RLFIQPITF AEDIQPITR RLFIQPITL AAFDQPITF AAFEQPITY ERFPQPITF RLFIQPITY SAFDQPITY ERFEQPITF ELFPQPITY RRAIQPITR RAFDQPITF ERFPQPITL RELIQPITF ARAIQPITY ALFIQLITL REAIQPITL ARFDQPITL SRLIQPITY SLFDQPITY RRLIQPITF EEFEQPISF ALLIQPITF RLFPQPITY REAIQPITY AEDIQPITL SEFIQLITY AEFEQPITF EEFEQPIAL RRFEQPITF SRLIQPITF REFIQVITY SRFDQPITF RRFEQPITY EEFPQPIAF RLFIQLITF SEFEQPITL ALFDQPITY ALDIQPITF EEFPQPIAY SLFIQLITL RLFIQVITL ELFDQPISY EEFPQPISF ARLIQPITY REFIQIITY SLFIQVITF SRFIQLITL SLFPQPITL REFIQVITF AEFIQVITY RLFDQPITY REFIQLITY ALFDQPITL AEFPQPITY AEFPQPITL ALDIQPITY AEFIQLITL SLDIQPITY REFEQPITY AEAIQPITL EEFEQPIAF AEFDQPITF RRFIQLITY RLFIQLITY ARLIQPITL SLLIQPITF SLFEQPITY SLFIQLITF AEFDQPITL SRFIQIITY SEAIQPITF ALFEQPITL ARDIQPITY ARFIQIITL SRLIQPITL RRFIQIITF ALFIQIITL AEAIQPITF SLFDQPITF REFIQLITL RRFPQPITY RRAIQPITL ELFDQPIAF RLFIQIITY RRFPQPITL SEDIQPITY RRFIQVITL AEDIQPITY ALLIQPITL ELFPQPIAY REDIQPITL SEFEQPITY ALAIQPITY RLFEQPITF SEFPQPITF AEAIQPITY ALFIQVITY RLFIQLITL AELIQPITL SELIQPITL SLFIQIITY SEFDQPITY AEFEQPITL ARFIQLITF ARFEQPITL AEFIQVITF SRDIQPITL RELIQPITL RRDIQPITF SRFIQLITF RLAIQPITF RLFIQIITL EEFEQPISY REFEQPITF SEFIQLITF REFPQPITY ALAIQPITL ALLIQPITY ALFPQPITF RLFPQPITF SEFPQPITY RLAIQPITY AEFPQPITF SRAIQPITY EEFDQPISL ERFEQPISY SLFEQPITL RRFPQPITF ARFDQPITF EEFPQPISY SEFIQIITF RRLIQPITL SEFIQVITY RRLIQPITY AEDIQPITF SRAIQPITF RLFDQPITF ALFEQPITY SLFPQPITF SLDIQPITF ERFPQPISL ARFIQIITY RRFDQPITL SEFIQIITY SLAIQPITY ALDIQPITL SRFIQVITY RLFDQPITL SLLIQPITY REFPQPITF SRFEQPITL SRFIQVITF SEDIQPITF RELIQPITY SEFEQPITF ERFDQPIAF EEFDQPIAL SRDIQPITY ERFDQPIAL ARFEQPITY ELFEQPIAF RLFIQIITF RLFEQPITY ARFEQPITF SRFDQPITL ERFPQPIAY RLDIQPITY SEFIQLITL REFDQPITL SRFEQPITY SRAIQPITL ERFEQPIAY RRFIQVITY SLFIQLITY RRFIQIITL SRFIQLITY ELFEQPISL REDIQPITY ERFPQPIAF SRFDQPITY SLFPQPITY ALFDQPITF AEFIQIITL REFPQPITL SEFIQVITF ARDIQPITL ELFEQPIAL ERFEQPISL REFIQIITF ELFDQPISF AEFEQPITY ALFIQVITF ELFPQPISY REFIQLITF ALFPQPITL RRFIQLITF ALAIQPITF ARLIQPITF EEFDQPIAY SRFIQIITL SLFDQPITL SEFIQVITL ALFIQIITY EEFPQPIAL SLAIQPITL ARFIQIITF SRFIQIITF RLLIQPITY SRFIQVITL SEFPQPITL ELFPQPIAL EEFEQPISL ALFIQIITF ELFEQPISF SELIQPITF AEFIQVITL AEFIQLITY ERFDQPIAY ARFPQPITL RLLIQPITL RLFPQPITL ELFEQPISY REAIQPITF SLFIQIITL EEFDQPIAF REFDQPITY ALFPQPITY RRFIQVITF ARFIQVITF RRAIQPITY SEAIQPITY SLFEQPITF ARFIQVITL RRFIQIITY EEFDQPISF ARFPQPITY ARFIQVITY RLLIQPITF SEDIQPITL ARFPQPITF REFIQIITL ARAIQPITF ARFIQLITL RLFIQVITY ELFPQPISF ERFDQPISF ALFIQLITF ERFDQPISY ALFEQPITF EEFDQPISY ERFDQPISL SRDIQPITF EEFEQPIAY ELFDQPISL ERFPQPISF SEAIQPITL SLFIQVITL ARFDQPITY AEFDQPITY RRFIQLITL AEFIQIITY SEFIQIITL ARDIQPITF RRAIQPITF AELIQPITF SRFPQPITL RRFDQPITY SLLIQPITL SLFIQVITY RLDIQPITL SLFIQIITF ERFEQPIAL RRDIQPITL RRFEQPITL ALFIQVITL ELFDQPIAY SLAIQPITF ERFPQPIAL SRFPQPITF SRFPQPITY REFDQPITF ELFEQPIAY RLFIQVITF SELIQPITY ERFEQPIAF RLFEQPITL EEFPQPISL SLDIQPITL AELIQPITY RRFDQPITF SEFDQPITL SEFDQPITF ALFIQLITY ELFPQPIAF REFEQPITL REFIQVITL ARFIQLITY RLDIQPITF AEFIQLITF ARAIQPITL RRDIQPITY ERFPQPISY ELFPQPISL SRFEQPITF AEFIQIITF ERFEQPISF RLAIQPITL REDIQPITF ELFDQPIAL

No HLA-A\*11:01 with 9, Use the overall attention for pepAAtype-peppsition

# Samples = 268

\*\*\*\*\*\*\*\*\*\* HLA-A\*11:01 | KVYEGVWKK → # Mutation peptides = 267

If you want to use IEDB tools to predict IC50, please use these format:

KVYEGVWKK KRYEGVWKK KVYEGVWKF SVYEGVWKK KLYEGVWKK KEYEGVWKK KVYEGVWKY KVYEGVWKL RVYEGVWKK AVYEGVWKK KVYPGVWKY KEYEGVWKL KLYEGVWKF KEYEGVWKY RRYEGVWKK KLYEGVWKL KRYEGVWKF KEYEGVWKF KVYPGVWKL RLYEGVWKK KVYDGVWKY REYEGVWKK KLYEGVWKY KRYEGVWKY SRYEGVWKK SLYEGVWKK KRYEGVWKL ARYEGVWKK SEYEGVWKK ALYEGVWKK KVYPGVWKF AEYEGVWKK KVYDGVWKF KVYDGVWKL ARYEGVWKF KRYEGVWSF KRYPGVWKF KEYEGVWSL KRYEGVWTY SEYEGVWKL SEYEGVWKY ALLEGVWKK REYEGVWKF AEYEGVWKL SLDEGVWKK KRYEGVWSL SLYEGVWKY ARYEGVWKL SEAEGVWKK RLDEGVWKK SRYEGVWKL KEYEGVWAF KLYEGVWAF SLAEGVWKK KRYEGVWAF KEYEGVWSY KEYDGVWKL ARAEGVWKK SRLEGVWKK KLYEGVWTY KLYEGVWSY SELEGVWKK RRYEGVWKL ALYEGVWKL KEYEGVWAL SLYEGVWKL REAEGVWKK RRDEGVWKK RRAEGVWKK RLYEGVWKF KRYEGVWSY KEYDGVWKF SEDEGVWKK REYEGVWKL RLAEGVWKK KRYEGVWAY KLYEGVWAL KLYDGVWKF KLYEGVWTF RLYEGVWKL RRYEGVWKY AEYEGVWKY KEYEGVWTL SLLEGVWKK RELEGVWKK REDEGVWKK KLYPGVWKF KRYPGVWKL AEYEGVWKF ARLEGVWKK RRYEGVWKF ALDEGVWKK KRYEGVWTL KLYEGVWTL KLYDGVWKY KLYEGVWAY KLYPGVWKY SRAEGVWKK KRYEGVWAL KRYEGVWTF ALYEGVWKY KEYPGVWKY KEYEGVWSF KRYDGVWKL SRYEGVWKY KEYEGVWTF KEYEGVWAY KRYDGVWKF SRDEGVWKK KLYDGVWKL KLYPGVWKL REYEGVWKY KLYEGVWSF KEYPGVWKF ARDEGVWKK RLYEGVWKY KRYPGVWKY KEYPGVWKL AELEGVWKK SEYEGVWKF RLLEGVWKK AEAEGVWKK KLYEGVWSL SLYEGVWKF KEYDGVWKY RRLEGVWKK ALAEGVWKK ALYEGVWKF AEDEGVWKK KEYEGVWTY SRYEGVWKF KRYDGVWKY ARYEGVWKY KRYDGVWTL ARDEGVWKF SLDEGVWKY SRDEGVWKL RRDEGVWKF KEYPGVWTF KLYPGVWSL KLYDGVWTF KRYDGVWTY KRYDGVWAY KLYPGVWAF AEDEGVWKL SRLEGVWKF ALAEGVWKY KEYDGVWAF RLLEGVWKL SRDEGVWKY KEYPGVWTY KLYPGVWSY KEYPGVWSF KLYDGVWTL KLYPGVWTY REAEGVWKL RELEGVWKF KEYDGVWSL REAEGVWKF RLAEGVWKF ARAEGVWKL REDEGVWKY RRLEGVWKF SRLEGVWKL REDEGVWKL REDEGVWKF ALDEGVWKY KEYDGVWTL KRYPGVWTY SRAEGVWKF KEYDGVWSY KRYPGVWAL ALLEGVWKY RRLEGVWKY SELEGVWKL KRYDGVWSL AELEGVWKL AEAEGVWKY KLYDGVWAL KRYDGVWSY SEAEGVWKY KLYPGVWAY ALDEGVWKL SLLEGVWKY RLLEGVWKY KEYDGVWAY SEDEGVWKY KRYPGVWTL KLYPGVWSF RRLEGVWKL KLYDGVWAF KEYDGVWSF SRAEGVWKY SLLEGVWKF ALLEGVWKL RLAEGVWKY ALDEGVWKF RRDEGVWKL SRDEGVWKF SELEGVWKY KEYPGVWSL SEDEGVWKL SLAEGVWKL RLLEGVWKF ARLEGVWKF ARLEGVWKY KRYPGVWAY SLAEGVWKY ARDEGVWKL AEAEGVWKF RLDEGVWKL SLDEGVWKL KEYPGVWAY KLYDGVWSF KLYPGVWTF KEYPGVWSY ARAEGVWKY AEDEGVWKF KEYDGVWAL KRYPGVWSY KRYDGVWSF KLYPGVWTL AELEGVWKY KLYDGVWAY REAEGVWKY KEYPGVWTL RLDEGVWKF RELEGVWKY AELEGVWKF KLYDGVWSL SRAEGVWKL KLYPGVWAL KRYDGVWAF ALLEGVWKF RELEGVWKL ALAEGVWKF KRYDGVWAL KRYPGVWAF RRAEGVWKL SLLEGVWKL RRAEGVWKY KRYPGVWSF KEYPGVWAL KEYDGVWTF KRYPGVWTF ALAEGVWKL AEDEGVWKY SEDEGVWKF SELEGVWKF RLDEGVWKY KEYPGVWAF RLAEGVWKL SEAEGVWKL RRAEGVWKF SRLEGVWKY KEYDGVWTY SLDEGVWKF RRDEGVWKY KRYPGVWSL KRYDGVWTF KLYDGVWSY SEAEGVWKF ARLEGVWKL AEAEGVWKL ARDEGVWKY KLYDGVWTY SLAEGVWKF ARAEGVWKF

No HLA-A\*68:01 with 11, Use the overall attention for pepAAtype-peppsition

# Samples = 243

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | SELFRSGLDSY → # Mutation peptides = 242

If you want to use IEDB tools to predict IC50, please use these format:

SELFRSGLDSY AELFRSGLDSY SRLFRSGLDSY SELFRSGLDSF SELPRSGLDSY SELFRSGLLSY SELFRSGLSSY SLLFRSGLDSY SELFRSGLDSL SELFRSGLVSY SEFFRSGLDSY SELDRSGLDSY RELFRSGLDSY SEIFRSGLDSY SELERSGLDSY SRLFRSGLDSF AEIFRSGLDSY SRLFRSGLLSY SELFRSSLLSY SLLFRSGLSSY SELFRSLLLSY RRLFRSGLDSY RELFRSGLDSF SLLPRSGLDSY SEFFRSGLDSL SEFPRSGLDSY SELERSGLDSL SLLFRSGLLSY RELFRSGLLSY SRLFRSGLVSY SRFFRSGLDSY RELFRSGLDSL SELPRSGLDSL AELFRSGLDSL SEIPRSGLDSY RELFRSGLSSY SEIFRSGLDSL REFFRSGLDSY SLIFRSGLDSY ARLFRSGLDSY SLLDRSGLDSY SRLPRSGLDSY SRLERSGLDSY SRIFRSGLDSY SEFDRSGLDSY RLLFRSGLDSY SELFRSSLVSY SELDRSGLDSL SEIFRSGLDSF SRLFRSGLSSY SELERSGLDSF AELFRSGLDSF SLLERSGLDSY SRLFRSGLDSL SELPRSGLDSF SLFFRSGLDSY ALLFRSGLDSY SLLFRSGLVSY SEIDRSGLDSY SEIERSGLDSY SELFRSLLVSY RELFRSGLVSY SELFRSSLSSY SELDRSGLDSF SRLDRSGLDSY REIFRSGLDSY AEFFRSGLDSY SLLFRSGLDSF AELFRSGLVSY AELFRSGLSSY AELFRSGLLSY SLLFRSGLDSL SEFERSGLDSY SELFRSLLSSY SEFFRSGLDSF ALIFRSGLDSY SRLFRSSLLSY RLLFRSGLSSY SEIDRSGLDSL AELFRSLLSSY SLLDRSGLDSF ARLFRSGLLSY AELFRSSLSSY SEFPRSGLDSF ALLFRSGLLSY ALFFRSGLDSY SLLPRSGLDSL SRLFRSLLSSY SRIPRSGLDSY SRFERSGLDSY SLLFRSLLLSY RLLFRSGLDSF SLLERSGLDSL SLFDRSGLDSY SEIERSGLDSL SRLFRSSLVSY REFFRSGLDSL SRIERSGLDSY SLLFRSLLSSY SLLFRSLLVSY RELFRSLLSSY RRIFRSGLDSY SLIPRSGLDSY SRIFRSGLDSF SRFDRSGLDSY SEIPRSGLDSF REFFRSGLDSF SLIFRSGLDSF SLLFRSSLSSY ARLFRSGLDSL AELFRSSLVSY SLLFRSSLLSY SRLFRSLLVSY SRFPRSGLDSY SRLFRSLLLSY RRLFRSGLDSL SRLPRSGLDSL RELFRSLLVSY RLLFRSGLLSY SRLERSGLDSF SRLDRSGLDSF REIFRSGLDSF SEFERSGLDSL SLFPRSGLDSY SLLPRSGLDSF AEIFRSGLDSL RELFRSSLSSY SRFFRSGLDSF SLIDRSGLDSY RRLFRSGLLSY SRLERSGLDSL SRIFRSGLDSL RLFFRSGLDSY SLLERSGLDSF RLLFRSGLDSL RELFRSSLLSY ARLFRSGLDSF SEFERSGLDSF SLFERSGLDSY ALLFRSGLSSY ARLFRSGLSSY AELFRSSLLSY RRLFRSGLSSY RELFRSSLVSY SLIERSGLDSY SEIPRSGLDSL ALLFRSGLDSF AEFFRSGLDSL RRLFRSGLVSY REIFRSGLDSL ARLFRSGLVSY SEFPRSGLDSL SRLDRSGLDSL SLLFRSSLVSY SEFDRSGLDSF ALLFRSGLDSL AELFRSLLLSY SRLFRSSLSSY RRLFRSGLDSF SLFFRSGLDSF SEIERSGLDSF AEFFRSGLDSF RELFRSLLLSY SRFFRSGLDSL RLLFRSGLVSY SRLPRSGLDSF SLIFRSGLDSL AEIFRSGLDSF AELFRSLLVSY ARIFRSGLDSY SLLDRSGLDSL SLFFRSGLDSL ALLFRSGLVSY RLIFRSGLDSY SEFDRSGLDSL SRIDRSGLDSY RRFFRSGLDSY ARFFRSGLDSY SEIDRSGLDSF RRLFRSSLVSY ARIFRSGLDSL RLFFRSGLDSF ALLFRSSLLSY ARLFRSLLSSY SRFDRSGLDSL ARIFRSGLDSF SLFERSGLDSL RRFFRSGLDSF SLFPRSGLDSL ALLFRSSLSSY SLIERSGLDSL ALLFRSSLVSY RLLFRSSLSSY SRFPRSGLDSF SRIPRSGLDSL ALIFRSGLDSL RRLFRSLLVSY SLIDRSGLDSL RRIFRSGLDSL SLIDRSGLDSF SLIPRSGLDSL ARLFRSSLLSY RLLFRSLLLSY SRIERSGLDSF RLIFRSGLDSL RRLFRSSLSSY SRFDRSGLDSF SLFPRSGLDSF SRFERSGLDSL SRIDRSGLDSL SRIDRSGLDSF ALFFRSGLDSL ARLFRSSLVSY ARLFRSLLVSY RLFFRSGLDSL RRIFRSGLDSF ALFFRSGLDSF SLFDRSGLDSL RRLFRSLLSSY ARFFRSGLDSL SRFERSGLDSF SLIERSGLDSF ALLFRSLLSSY ARFFRSGLDSF ALIFRSGLDSF RLLFRSLLVSY SRFPRSGLDSL ARLFRSLLLSY ALLFRSLLVSY RRFFRSGLDSL SLIPRSGLDSF RLLFRSSLLSY SRIERSGLDSL RLIFRSGLDSF RLLFRSLLSSY RLLFRSSLVSY RRLFRSLLLSY RRLFRSSLLSY SLFERSGLDSF ALLFRSLLLSY ARLFRSSLSSY SLFDRSGLDSF SRIPRSGLDSF

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 225

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | SELFRSGLDS → # Mutation peptides = 224

If you want to use IEDB tools to predict IC50, please use these format:

SELFRSGLDS SELFRSGLDF SRLFRSGLDS SELFRSGLLS SELFRSGLSS SELFRSGLTS SELFRSGLDY RELFRSGLDS AELFRSGLDS SELFRSGLDL SLLFRSGLDS SLLFRSGLLS SRLFRSGLDF RELFRSGLDL AELFRSGLDF SRLFRSGLSS SEFFRSGLLS SRLFRSGLLS SLLFRSGLDF AELFRSGLSS RLLFRSGLDS SEIFRSGLLS SEFFRSGLDL SELFRSGVDY SELFRSGIDY SEIFRSGLDF SLLFRSGLDL SLLFRSGLSS RELFRSGLDY AELFRSGLDY SEIFRSGLSS SEFFRSGLTS SEFFRSGLDY SRLFRSGLTS AELFRSGLLS SRLFRSGLDY RELFRSGLDF SEIFRSGLDL RELFRSGLTS SRLFRSGLDL SELFRSGIDF SELFRSGIDL ALLFRSGLDS SEFFRSGLSS ARLFRSGLDS AELFRSGLDL SELFRSGVDL RELFRSGLSS SLLFRSGLDY AELFRSGLTS SELFRSGVDF SEIFRSGLTS RELFRSGLLS SEIFRSGLDY RRLFRSGLDS SEFFRSGLDF SLLFRSGLTS AEIFRSGLSS SLLFRSGIDL SEIFRSGVDF RLLFRSGLTS SEIFRSGVDL SRLFRSGVDL REIFRSGLDY ARLFRSGLTS REFFRSGLDL SEFFRSGIDY SRLFRSGVDF SLIFRSGLSS RRLFRSGLDY REFFRSGLLS AEIFRSGLDF SLFFRSGLDL SLIFRSGLDL AEFFRSGLTS SLFFRSGLLS SRLFRSGIDF REIFRSGLDL SRFFRSGLSS SRLFRSGIDL AEFFRSGLDY REIFRSGLSS SEIFRSGIDF ALLFRSGLDY SEFFRSGVDY RRLFRSGLTS AEFFRSGLDF SLLFRSGIDY RLLFRSGLDL SRFFRSGLLS ALLFRSGLTS AEIFRSGLLS SLLFRSGVDL SLIFRSGLTS REFFRSGLDY ARLFRSGLDF ARLFRSGLDL SEIFRSGVDY SEFFRSGVDL SRIFRSGLDY SRLFRSGVDY SLLFRSGIDF SRIFRSGLTS RRLFRSGLDL ALLFRSGLLS ALLFRSGLDL ARLFRSGLLS SLIFRSGLDY REIFRSGLDF SRIFRSGLDF SRFFRSGLDL SRFFRSGLTS RRLFRSGLDF SLFFRSGLDY RLLFRSGLDF RRLFRSGLLS SLFFRSGLSS SRIFRSGLDL SEIFRSGIDY SLFFRSGLDF SLIFRSGLLS RRLFRSGLSS ARLFRSGLDY REFFRSGLDF ALLFRSGLDF AEFFRSGLLS ALLFRSGLSS SEFFRSGVDF ARLFRSGLSS RLLFRSGLLS SEFFRSGIDF SRIFRSGLSS AEIFRSGLTS SLLFRSGVDF REIFRSGLTS SLIFRSGLDF REFFRSGLTS SLFFRSGLTS SRLFRSGIDY REIFRSGLLS SLLFRSGVDY SRFFRSGLDF AEIFRSGLDL AEFFRSGLSS RLLFRSGLDY SRFFRSGLDY REFFRSGLSS AEFFRSGLDL AEIFRSGLDY SRIFRSGLLS SEIFRSGIDL RLLFRSGLSS SEFFRSGIDL RLIFRSGLDF ARIFRSGLDY SRFFRSGVDL SRIFRSGIDY RLFFRSGLDY ALFFRSGLDY SRIFRSGVDL ALIFRSGLDL RLFFRSGLDF SLIFRSGIDL ARFFRSGLSS RRFFRSGLDY ARIFRSGLLS ARFFRSGLDL SLIFRSGIDF SLIFRSGIDY RLFFRSGLSS RRIFRSGLDL RRIFRSGLLS ALIFRSGLSS SRIFRSGIDL RRIFRSGLTS SLFFRSGVDY RRFFRSGLDF ARFFRSGLTS ARFFRSGLLS SRIFRSGVDY ALFFRSGLDF RRFFRSGLTS RRFFRSGLDL RLIFRSGLTS SRIFRSGIDF SLFFRSGIDL ALFFRSGLDL SLIFRSGVDY SLIFRSGVDL RLFFRSGLTS ALIFRSGLDY RLFFRSGLDL SRFFRSGIDY RLIFRSGLDL ARFFRSGLDF RLIFRSGLDY SLFFRSGIDY SRFFRSGIDL SLFFRSGVDL RLIFRSGLLS ALIFRSGLTS SRFFRSGVDF ALFFRSGLSS SLFFRSGVDF ALFFRSGLLS ALFFRSGLTS ARIFRSGLTS ARFFRSGLDY SRFFRSGIDF SRFFRSGVDY ALIFRSGLLS RRIFRSGLDY RRIFRSGLDF RLIFRSGLSS ARIFRSGLSS SRIFRSGVDF SLIFRSGVDF SLFFRSGIDF RRIFRSGLSS ALIFRSGLDF ARIFRSGLDL ARIFRSGLDF RRFFRSGLLS RLFFRSGLLS RRFFRSGLSS

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 294

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | ELFRSGLDSY → # Mutation peptides = 293

If you want to use IEDB tools to predict IC50, please use these format:

ELFRSGLDSY ELFRSGLISY ALFRSGLDSY ELFRSGLDTY ELFRSGLLSY ELLRSGLDSY ELFRSGLDSL SLFRSGLDSY RLFRSGLDSY ELFRSGLDSF EEFRSGLDSY ELFRSGLDLY ELFRSGLVSY ERFRSGLDSY ELIRSGLDSY ELLRSGLLSY ELIRSGLVSY ERFRSGLISY SLFRSGLLSY ELFRSGLISF ELIRSGLLSY ELIRSGLISY ARFRSGLDSY ALFRSGLVSY RLFRSGLDLY EEFRSGLDTY ELFRSGLVSL RLFRSGLDSL RLLRSGLDSY RLFRSGLISY ERLRSGLDSY ALFRSGLLSY EEFRSGLDLY RLFRSGLLSY SLLRSGLDSY ALFRSGLDLY EEFRSGLISY SLFRSGLDLY EEIRSGLDSY SEFRSGLDSY ALFRSGLISY ERFRSGLDTY ELLRSGLVSY AEFRSGLDSY SLFRSGLISY SLFRSGLDSF ALIRSGLDSY ALFRSGLDSL SLFRSGLDTY ELIRSGLDSL RLFRSGLDSF ERFRSGLLSY EEFRSGLDSF ALLRSGLDSY RLFRSGLDTY RLIRSGLDSY ALFRSGLDTY SLIRSGLDSY ELIRSGLDSF ERFRSGLVSY ERFRSGLDSF SLFRSGLDSL ALFRSGLDSF EEFRSGLLSY ELFRSGLLSL EEFRSGLVSY ERFRSGLDLY RRFRSGLDSY ERIRSGLDSY EELRSGLDSY EEFRSGLDSL ELLRSGLDSF SRFRSGLDSY REFRSGLDSY ELFRSGLVSF ELFRSGLLSF ERFRSGLDSL RLFRSGLVSY ELLRSGLISY SLFRSGLVSY ELFRSGLISL ELLRSGLDSL RLFRSGLLLY SRFRSGLDSF ALIRSGLDSF ERFRSGLISF ERLRSGLLSY ERLRSGLDSL ARFRSGLDSF AEFRSGLDTY ELLRSGLVSF ARFRSGLDTY ARFRSGLVSY SLLRSGLDSF SLFRSGLITY AEFRSGLDSF ARIRSGLDSY SRLRSGLDSY SEFRSGLDSL ELIRSGLVSL RLFRSGLVTY ERFRSGLVSF ERFRSGLLSL EEIRSGLDSL SEIRSGLDSY ALLRSGLDSF ALFRSGLVLY ALIRSGLDSL EEFRSGLVSL REFRSGLISY REFRSGLDSF AEFRSGLISY SLLRSGLDSL RLIRSGLDSF ALFRSGLLTY ERIRSGLVSY SEFRSGLDLY EEFRSGLLSF ERLRSGLVSY RRFRSGLDLY SLIRSGLDSF RLLRSGLDSF SLFRSGLVTY ELIRSGLISL RRFRSGLISY RELRSGLDSY EEIRSGLISY ERIRSGLLSY ERFRSGLVSL ALFRSGLILY ELLRSGLLSL EELRSGLDSF SEFRSGLDSF SRFRSGLDLY REIRSGLDSY EELRSGLDSL EEFRSGLVSF ELLRSGLISF EEIRSGLLSY ELIRSGLLSF EELRSGLLSY ERLRSGLISY ELLRSGLLSF AEFRSGLDSL ALLRSGLDSL RLLRSGLDSL AELRSGLDSY AEFRSGLLSY ALFRSGLLLY RRFRSGLDSF EEIRSGLVSY SLFRSGLLLY ARLRSGLDSY ELLRSGLVSL ERIRSGLISY EELRSGLVSY RLFRSGLILY RRFRSGLVSY SRFRSGLDSL ARFRSGLDSL EEFRSGLISL SEFRSGLDTY REFRSGLLSY RLFRSGLVLY SLFRSGLLTY ARFRSGLDLY ELIRSGLVSF SELRSGLDSY AEIRSGLDSY EEFRSGLISF ARFRSGLLSY EEFRSGLLSL ERIRSGLDSL SRFRSGLVSY ALFRSGLVTY SRFRSGLDTY SRFRSGLLSY ARFRSGLISY EEIRSGLDSF ERIRSGLDSF SEFRSGLISY ERFRSGLISL SEFRSGLVSY ALFRSGLITY REFRSGLVSY REFRSGLDLY SLFRSGLILY ERLRSGLDSF RLFRSGLLTY RLFRSGLITY AEFRSGLVSY RRFRSGLLSY RRFRSGLDTY ERFRSGLLSF SEFRSGLLSY REFRSGLDTY RLIRSGLDSL RRLRSGLDSY RRFRSGLDSL RRIRSGLDSY AEFRSGLDLY SRFRSGLISY ELIRSGLLSL SRIRSGLDSY SLIRSGLDSL REFRSGLDSL ELIRSGLISF SLFRSGLVLY ELLRSGLISL EELRSGLISY EEIRSGLLSL REFRSGLLLY EELRSGLVSL SRLRSGLDSF SRFRSGLVTY AEFRSGLVLY EEIRSGLISL ERIRSGLVSF EELRSGLISL ARFRSGLVLY ARLRSGLDSF ERIRSGLISF ARFRSGLVTY EELRSGLISF ARFRSGLLLY RRIRSGLDSL ERLRSGLVSF ARFRSGLLTY RRFRSGLITY REFRSGLILY SELRSGLDSL REIRSGLDSL ERLRSGLISF AELRSGLDSL SRIRSGLDSL RRIRSGLDSF RRFRSGLVLY RELRSGLDSL EEIRSGLVSL AELRSGLDSF RRFRSGLVTY ERIRSGLLSF SRFRSGLVLY SEFRSGLLLY SEFRSGLVLY SRFRSGLLLY AEIRSGLDSF ARFRSGLITY AEFRSGLVTY REFRSGLLTY AEFRSGLITY ERLRSGLVSL SEFRSGLITY AEFRSGLLTY RRFRSGLILY RRFRSGLLLY SRLRSGLDSL REFRSGLVTY SRFRSGLITY SRFRSGLLTY ARIRSGLDSL ARLRSGLDSL RELRSGLDSF ERIRSGLVSL SEIRSGLDSL RRLRSGLDSF ARIRSGLDSF AEFRSGLLLY EELRSGLLSL SEIRSGLDSF REFRSGLITY EELRSGLVSF AEIRSGLDSL EEIRSGLISF SEFRSGLVTY SELRSGLDSF ERLRSGLLSL EEIRSGLVSF EELRSGLLSF RRFRSGLLTY SEFRSGLLTY SEFRSGLILY REFRSGLVLY ERLRSGLISL RRLRSGLDSL AEFRSGLILY SRFRSGLILY ERLRSGLLSF SRIRSGLDSF EEIRSGLLSF ARFRSGLILY ERIRSGLISL REIRSGLDSF ERIRSGLLSL

No HLA-A\*68:01 with 9, Use the overall attention for pepAAtype-peppsition

# Samples = 343

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | FRSGLDSYV → # Mutation peptides = 342

If you want to use IEDB tools to predict IC50, please use these format:

FRSGLDSYV FRSGLDSYF ARSGLDSYV RRSGLDSYV FRSGLDSYY SRSGLDSYV FRSGLDSYL FESGLDSYY SLSGLDSYV AESGLDSYV SRSGLDSYF FRSDLDSYY FRSPLDSYL RLSGLDSYV ARDGLDSYV ARSGLDSYL FRSPLDSYY ARSGLDSYY RRLGLDSYV RRDGLDSYV RRSGLDSYL FESGLDSYF SRSGLDSYY FRSPLDSYF ARSGLDSYF FRSELDSYY RESGLDSYV SESGLDSYV FLSGLDSYY RRAGLDSYV FRSELDSYF SRAGLDSYV FLSGLDSYL SRLGLDSYV FRSDLDSYF RRSGLDSYY SRDGLDSYV RRSGLDSYF FRSDLDSYL ARLGLDSYV FRSELDSYL FESGLDSYL ALSGLDSYV FLSGLDSYF SRSGLDSYL ARAGLDSYV AEAGLDSYV REAGLDSYV SLAGLDSYV FRSELDSAL ALSGLDSYF FLSPLDSYL SEDGLDSYV ALSGLDSYY SLSGLDSYF FLSDLDSYL ARLGLDSYL FLSELDSYL RRSELDSYF FESELDSYL ARSDLDSYF ARSPLDSYL ARSELDSYY FRSPLDSTF FRSELDSSY ARAGLDSYL ARAGLDSYY ARSDLDSYL FRSDLDSTY ALLGLDSYV FRSDLDSAF FRSPLDSTL FESELDSYF ARLGLDSYY FLSELDSYY SRAGLDSYL FRSELDSTL FLSELDSYF FRSDLDSAY RRSPLDSYF RLLGLDSYV ARAGLDSYF RRLGLDSYF FESELDSYY ALSGLDSYL SLSGLDSYL FESPLDSYF FLSPLDSYF RESGLDSYY RLSGLDSYF AESGLDSYY FRSPLDSSL SRSDLDSYY FESPLDSYL SRSELDSYF SEAGLDSYV FRSELDSTF RRDGLDSYL RRAGLDSYF RRSDLDSYY ARSELDSYF FESDLDSYF SRSPLDSYF SRDGLDSYF FRSDLDSSL FLSDLDSYY FESDLDSYY SRAGLDSYY SRSELDSYY FRSELDSSL FRSDLDSSY SESGLDSYF FRSPLDSSF SRSPLDSYL SRSELDSYL RRSPLDSYY SRSDLDSYF RRSPLDSYL ARDGLDSYF FRSPLDSAF RRSELDSYY ARDGLDSYL FLSPLDSYY SRDGLDSYL RRDGLDSYF FRSELDSTY SELGLDSYV FRSPLDSTY FRSDLDSTL FRSDLDSSF RLDGLDSYV RLSGLDSYY RELGLDSYV RRSDLDSYL SRLGLDSYL FRSDLDSTF ALAGLDSYV SESGLDSYY ARSPLDSYY ARSDLDSYY AELGLDSYV SRAGLDSYF SRSDLDSYL SLDGLDSYV RLAGLDSYV SRLGLDSYY SLLGLDSYV FRSPLDSSY RRSELDSYL FLSDLDSYF SRLGLDSYF REDGLDSYV RESGLDSYF RRAGLDSYY RRDGLDSYY ARSPLDSYF FESPLDSYY ARDGLDSYY AESGLDSYL RRLGLDSYY FRSPLDSAL RRSDLDSYF RLSGLDSYL AESGLDSYF ALDGLDSYV RRAGLDSYL FRSDLDSAL AEDGLDSYV SRDGLDSYY RESGLDSYL SESGLDSYL FRSPLDSAY SLSGLDSYY ARLGLDSYF FESDLDSYL RRLGLDSYL ARSELDSYL FRSELDSAY SRSPLDSYY FRSELDSSF FRSELDSAF FESDLDSAL FESDLDSSF SEAGLDSYF AEAGLDSYL SELGLDSYF FLSDLDSAY FESPLDSAF FLSELDSSY FESELDSAF FESELDSTF SLSELDSYF AESPLDSYY AESPLDSYF AESELDSYF SESDLDSYL ALSDLDSYL FESPLDSAL FLSELDSAF RLSPLDSYY FLSDLDSAL SLSPLDSYY AELGLDSYY FESPLDSTL SESELDSYF ALSDLDSYY SESPLDSYF AESELDSYY RLLGLDSYL AESPLDSYL REAGLDSYF RELGLDSYF RESPLDSYL FLSPLDSAF RLDGLDSYF FLSPLDSSY SEDGLDSYF RLSELDSYF SLDGLDSYY SESDLDSYY FESDLDSAY ALSPLDSYY SLSPLDSYL FLSPLDSTF FESELDSTY SLSDLDSYL REDGLDSYY AELGLDSYF RESELDSYF ALDGLDSYL FLSPLDSTY SESDLDSYF AESELDSYL SLDGLDSYL AESDLDSYF FLSELDSAL SLLGLDSYF FLSDLDSSL FLSELDSTF ALSPLDSYF RELGLDSYL FLSDLDSTL SELGLDSYL ALLGLDSYL SLLGLDSYL RLLGLDSYY FLSELDSSL ALAGLDSYY ALSELDSYY ALDGLDSYY FESPLDSTF AEDGLDSYF FESPLDSTY SLSPLDSYF FLSELDSSF ALSELDSYL SEDGLDSYY SLLGLDSYY ALSELDSYF ALSDLDSYF ALAGLDSYF SESPLDSYY SLSDLDSYY RLLGLDSYF RESDLDSYY FESELDSTL AELGLDSYL FESPLDSSF RELGLDSYY SLDGLDSYF REDGLDSYF ALLGLDSYF SESELDSYY SESELDSYL SEAGLDSYL FLSELDSAY AESDLDSYY FESPLDSAY RLSDLDSYY RLAGLDSYY FESDLDSSY ALSPLDSYL FESELDSSL AESDLDSYL RESELDSYY FLSDLDSSF FLSDLDSAF FESDLDSTY RLAGLDSYF AEAGLDSYF AEAGLDSYY SLAGLDSYL REDGLDSYL RLDGLDSYY SELGLDSYY SEDGLDSYL RESDLDSYL RESPLDSYY AEDGLDSYY FESPLDSSL FLSELDSTL FESDLDSTL RLSDLDSYL FESELDSAY FLSPLDSTL FESDLDSSL RLSELDSYY ALLGLDSYY ALAGLDSYL RLSPLDSYF FESDLDSAF RLSDLDSYF ALDGLDSYF FLSPLDSAL FLSELDSTY FLSDLDSTF RLDGLDSYL RLSELDSYL RLSPLDSYL SLAGLDSYY FLSPLDSAY FLSPLDSSL RESELDSYL FESELDSSF FESDLDSTF FLSPLDSSF SEAGLDSYY FLSDLDSTY FESELDSSY SLSELDSYL SLSDLDSYF RESPLDSYF SLAGLDSYF FLSDLDSSY SLSELDSYY FESPLDSSY RLAGLDSYL SESPLDSYL RESDLDSYF REAGLDSYY REAGLDSYL FESELDSAL AEDGLDSYL

No HLA-A\*68:01 with 10, Use the overall attention for pepAAtype-peppsition

# Samples = 321

\*\*\*\*\*\*\*\*\*\* HLA-A\*68:01 | PSDTRQMLFY → # Mutation peptides = 320

If you want to use IEDB tools to predict IC50, please use these format:

PSDTRQMLFY RSDTRQMLFY PEDTRQMLFY ASDTRQMLFY PSDTRQMLFF PSDTRQMLFL PRDTRQMLFY SSDTRQMLFY PLDTRQMLFY ALDTRQMLFY PRDTRQMLFF PLFTRQMLFY ARDTRQMLFY PEDTRQMLTY PRDTRQMLTY PLDTRQMLSY AEDTRQMLFY PEDTRQMLLY PRFTRQMLFY SLDTRQMLFY SRDTRQMLFY PLDTRQMLLY PRDTRQMLLY RRDTRQMLFY SEDTRQMLFY PRDTRQMLSY PRITRQMLFY PRDTRQMLFL REDTRQMLFY PLLTRQMLFY RLDTRQMLFY PEFTRQMLFY PLDTRQMLFL PELTRQMLFY PEDTRQMLSY PLDTRQMLFF PRLTRQMLFY PEITRQMLFY PLDTRQMLTY PEDTRQMLFL PEDTRQMLFF PLITRQMLFY SRDTRQMLLY PELTRQMLFL PEFTRQMIFY PRFTRQMLFF SEDTRQMLFL PEFTRQMLFF RLITRQMLFY PELTRQMIFY RRDTRQMLLY AEFTRQMLFY PRITRQMLFL SRFTRQMLFY SLDTRQMLLY RLDTRQMLLY REDTRQMLTY SRDTRQMLFL REDTRQMLFF REDTRQMLFL PLLTRQMIFY PRLTRQMLFF PLFTRQMVFY ARDTRQMLFF PLLTRQMLFL ARDTRQMLLY SEDTRQMLTY RRITRQMLFY PEITRQMLFL ARITRQMLFY REDTRQMLSY RRDTRQMLTY ALDTRQMLFF ALDTRQMLTY AEDTRQMLFF AELTRQMLFY REDTRQMLLY AEITRQMLFY PLLTRQMLFF ALDTRQMLFL ALITRQMLFY RLDTRQMLSY RRLTRQMLFY RLLTRQMLFY SLDTRQMLSY PRLTRQMLFL RELTRQMLFY PRFTRQMLFL PLITRQMIFY PLITRQMVFY SRLTRQMLFY PLFTRQMIFY RRFTRQMLFY PEITRQMLFF ALLTRQMLFY PRITRQMVFY PEITRQMIFY PRLTRQMIFY RLFTRQMLFY ALDTRQMLSY ARDTRQMLTY PEFTRQMVFY PEITRQMVFY AEDTRQMLSY SLDTRQMLFF ARDTRQMLFL PLFTRQMLFF RRDTRQMLFL PRITRQMIFY SRDTRQMLTY AEDTRQMLFL SRDTRQMLFF RRDTRQMLFF ALDTRQMLLY PRLTRQMVFY PLLTRQMVFY SEDTRQMLLY SLITRQMLFY PLITRQMLFL SRITRQMLFY SLDTRQMLFL SEDTRQMLSY SLLTRQMLFY PLITRQMLFF SRDTRQMLSY PLFTRQMLFL SEFTRQMLFY RLDTRQMLTY SELTRQMLFY PELTRQMLFF RRDTRQMLSY RLDTRQMLFF SEITRQMLFY ARDTRQMLSY PRFTRQMIFY AEDTRQMLTY AEDTRQMLLY PEFTRQMLFL SEDTRQMLFF ARFTRQMLFY PRITRQMLFF SLDTRQMLTY ALFTRQMLFY REFTRQMLFY REITRQMLFY ARLTRQMLFY PRFTRQMVFY SLFTRQMLFY RLDTRQMLFL PELTRQMVFY AELTRQMLFL AEFTRQMLFL RRDTRGMLTY PRLTRQMIFL SRFTRQMLFF RLDTRGMLLY REDTRGMLSY ALFTRQMLFL RLDTRLMLTY SEDTRGMLLY PLFTRQMIFF ARDTRGMLLY SRDTRSMLTY REDTRLMLLY SEDTRSMLLY SRFTRQMLFL SLFTRQMLFL SEDTRGMLTY PLFTRQMIFL RRDTRSMLTY SLDTRLMLSY ARDTRGMLTY PEITRQMIFF AEDTRSMLSY RLDTRSMLSY SLDTRGMLLY AEDTRLMLTY SRLTRQMLFF PLLTRQMVFF SLDTRSMLLY SLDTRSMLSY ARDTRLMLSY SRITRQMLFF RLITRQMLFL PRITRQMVFF SLLTRQMLFL PEFTRQMIFL SLDTRSMLTY PRLTRQMIFF SLDTRLMLTY SRDTRSMLLY PRLTRQMVFL SRLTRQMLFL AEITRQMLFL PLLTRQMIFL ALFTRQMLFF SLLTRQMLFF SRDTRGMLTY AEITRQMLFF PLITRQMVFL PLFTRQMVFL ARDTRSMLSY REDTRSMLTY AEDTRLMLSY ARDTRGMLSY ARITRQMLFF PEFTRQMVFF RLDTRGMLSY ALITRQMLFF PLITRQMVFF SELTRQMLFL ALDTRLMLTY RLFTRQMLFF ALLTRQMLFF REFTRQMLFL RRDTRGMLSY AEDTRLMLLY SRDTRLMLSY ALDTRGMLLY REFTRQMLFF ARFTRQMLFF RRDTRGMLLY PELTRQMIFF ARLTRQMLFL SRITRQMLFL SLITRQMLFF ALDTRGMLSY PELTRQMVFF SEITRQMLFL PEITRQMIFL RLDTRLMLSY RRDTRSMLSY REITRQMLFL RELTRQMLFL AEDTRSMLLY RRDTRLMLSY ALDTRGMLTY ARDTRLMLTY SRDTRGMLSY RRITRQMLFF SEDTRLMLLY PRFTRQMIFF ARDTRSMLLY SLDTRGMLSY RRFTRQMLFF SRDTRLMLLY PRITRQMIFL PEITRQMVFL RRDTRLMLLY ARITRQMLFL RRFTRQMLFL SRDTRLMLTY AELTRQMLFF RLITRQMLFF RLLTRQMLFL RELTRQMLFF PLLTRQMIFF RRLTRQMLFL SLITRQMLFL RRDTRSMLLY REDTRSMLLY RRITRQMLFL REDTRLMLTY PELTRQMIFL PELTRQMVFL SLFTRQMLFF AEDTRGMLSY AEDTRSMLTY RLDTRGMLTY ALDTRLMLLY AEDTRGMLLY ARDTRLMLLY AEFTRQMLFF ARFTRQMLFL SEDTRGMLSY RLDTRLMLLY REDTRLMLSY SELTRQMLFF SEFTRQMLFF PEITRQMVFF RLDTRSMLLY RLLTRQMLFF SEFTRQMLFL PRLTRQMVFF ARDTRSMLTY PRFTRQMVFF ALDTRSMLSY PRFTRQMVFL SEDTRSMLTY PEFTRQMIFF RLFTRQMLFL PRITRQMVFL REITRQMLFF ALDTRSMLTY PRITRQMIFF RRLTRQMLFF PLFTRQMVFF REDTRGMLLY SLDTRLMLLY SLDTRGMLTY PRFTRQMIFL ARLTRQMLFF ALITRQMLFL SRDTRGMLLY ALDTRSMLLY ALLTRQMLFL SEITRQMLFF PLLTRQMVFL SEDTRLMLTY RLDTRSMLTY PLITRQMIFF SEDTRLMLSY REDTRSMLSY RRDTRLMLTY SRDTRSMLSY AEDTRGMLTY PEFTRQMVFL SEDTRSMLSY ALDTRLMLSY REDTRGMLTY PLITRQMIFL

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